MY FATHER
MARCONI

MY FATHER, MARCONI

BY DEGNA MARCONI

This richly detailed biography of a fascinating man — Guglielmo Marconi, the "father of wireless" — is written with lively affection and understanding by his eldest daughter.

Beginning with Marconi's boyhood in northern Italy nearly a century ago, the author vividly re-creates the early life of the scientist who was to change the whole history of communication. Completely captured by contemporary discoveries in electricity, Marconi was dedicated to the private little world of his attic laboratory, where he spent exhausting months testing his first plans for a wireless telegraph. Supported by his devoted Irish mother, and opposed by his Italian father, who felt Marconi's experiments were only childish tinkering, the young man finally assembled the first wireless telegraph and transmitted radio signals several hundred meters. He was then twenty years old.

For most men this would have been the climax of an outstanding scientific career. For Marconi this was only the beginning. Stormy and dramatic years followed, for the Italian government rejected his patent, and he reluctantly traveled to England, where his ideas found enthusiastic acceptance. With immediacy and authority, the author shares these times of trial, climaxed by the excitement of high triumph when, in 1901, he flashed the first transatlantic signal from Newfoundland to Cornwall — proving by this one brilliant experiment that world-wide communication was possible.

(continued on back flap)

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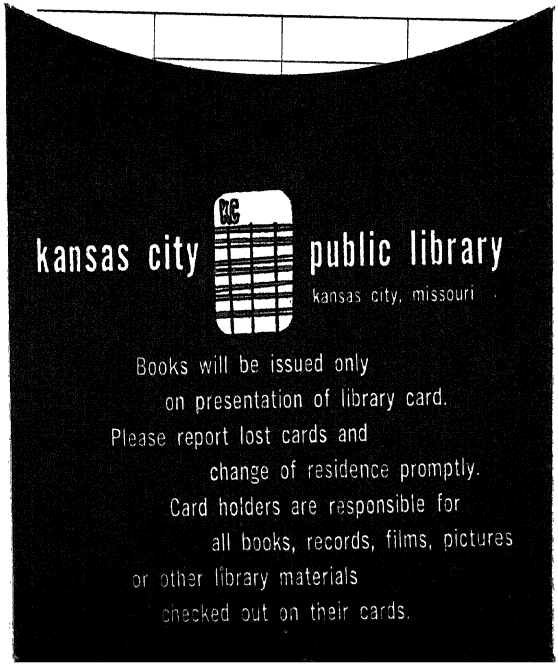

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DEGNA MARCONI

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FOR MY SON FRANCESCO,

GRANDSON OF

GUGLIELMO MARCONI

ACKNOWLEDGMENTS

Many people have helped me during the years when I was collecting material for this book and to all of them I wish to express my gratitude.

My father's old colleagues shared their recollections of him, and Mr. Ronald Ferguson, until the end of 1961 Managing Director of The Marconi International Marine Communication Company Ltd. in England and in 1914 wireless operator aboard the *Empress of Ireland* when she sank, offered me the resources at his disposition. Marconi's Wireless Telegraph Company Ltd. kindly gave me access to many of my father's personal papers and has graciously given permission to reproduce many of the photographs in this book. At the General Post Office in London I was given copies of some of the early letters and agreements between my father and Sir William Preece and the vivid description of Father's first day there by P. R. Mullis.

Of the books available I have consulted Orrin E. Dunlap, Jr.'s, *Marconi, the Man and His Wireless,* Walter Lord's *A Night to Remember,* H. E. Hancock's *Wireless at Sea,* Luigi Solari's *Marconi,* R. N. Vyvyan's *Wireless over Thirty Years,* and the Hon. Donough O'Brien's *History of the O'Briens.* The RCA David Sarnoff Research Center in Princeton, New Jersey, supplied a

print of the first Marconi patent; technical societies in England, Italy, America and France, journals in which my father's papers were reprinted; and Clinch Calkins aided me in preliminary research.

On my personal pilgrimages to South Wellfleet, London and back to Pontecchio, in Bologna, Rome and New York, people who knew Guglielmo Marconi were happy to talk of him again.

Above all my mother opened her heart to me, re-creating years before I was born and recapturing the sound of Father's voice when he was young so that this should be a true portrait.

Degna Marconi

PART I

CHAPTER ONE

I was born in 1908, thirteen years after my father, Guglielmo Marconi, made the historic discovery that was to revolutionize the world of communication. By the time I was old enough to begin storing up memories, he was deeply involved in expanding the invention he had made on the top floor of the old house near Bologna and in supervising the immense business it entailed.

He was often absent, either in body or in mind, for his dedication to his work was absolute. Moreover, I was only sixteen when my father and mother separated, and the easy, accustomed family ties were dissolved.

Yet this dedicated and private man, who had developed a protective façade against intrusion by the time he was twenty, loved us children anxiously, openly, and devotedly. We accepted him, as the young do, first as a person. But we could not help realizing that he was a famous man. For us the question asked was never, "What does your father do?" It was, "Your name is Marconi? Are you any relation... ?"

So for me over the years there have always been two Marconis: the scientist and my father. The first was absorbed in things I could not comprehend. The second, an intricate and fascinating human being I have come to see clearly only by reading back-

ward, the way that the Chinese do, fitting together the pieces of his story with my memories. Some of these are family legends that have a shrewd validity of their own, since they are essentially truth.

The most memorable of them (and whether it is precisely true or only based on what happened does not make it less revealing) I heard from my grandmother, my father's mother. I was barely in my teens and she was an old, old woman. Looking back, I realize that her Irish skin was still fair, her Irish-tinged voice still musical. She had never been taller than five-foot-three and in old age she was tiny, tinier even than the granddaughter to whom she spoke. The glinting auburn hair had faded and was dyed a rakish shade, the wife who had deplored her husband's meanness with money was now a widow who pinched every farthing. She hoarded her possessions in locked trunks crammed into corners of her London flat. Still, I liked to visit her because she smelled of chocolates. They must have been one of her few extravagances, the sweets she bought to entice her grandchildren to call.

What she told me seemed infinitely remote. I found it impossible to believe that she was talking about herself and my father. Rather, these were characters out of a dream. Sitting in the gray light of a London afternoon, she carried me back on the soft cadences of her speech more than thirty years to a summer night in Italy.

The air was sweet with the scent of drying hay, she told me, alive with the chirruping of crickets, wrapping the Marconi house in a cocoon of sound. The long twilight had given way to heavy darkness and the large rooms and wide hallways, their stone floors bare, were cool and silent. It was close to midnight and my grandmother was asleep.

She was waked, she remembered, by a hand on her shoulder, shaking her gently but urgently and the light from a candle her younger son held in his other hand.

"Mother?" he said and, sensing the urgency in his tone, she got up quickly, pulled on a warm dressing gown and followed him.

The top floor of the big, foursquare white house had been

Guglielmo's to use as he pleased for three months. In his hands, it had become a laboratory. The family, his dictatorial Italian father and his poetic Irish mother (the old woman in the high-backed chair who sat facing me), his adoring older brother Alfonso and his half brother, Luigi, the gay cousins, Italian and Irish, all knew about it and responded to Guglielmo's scientific mysteries in their own fashions. I see now, there can never have been the slightest doubt in his mind which of them he wanted with him that night in 1894.

Guglielmo led his mother up three flights of shallow, stone steps into his inner world, full of jars and instruments. As she watched, he bowed his blond head over a telegraph key set on a workbench under a window and tapped it delicately with one finger.

From the far end of the long double room came a gentle, insistent sound. A bell was ringing, little louder than the crickets but with concise, wakeful clarity. Between the transmitter under his hand and the tiny tinkling lay nothing but air.

The Marconi family came originally from the minute mountain hamlet of Capugnano, high in the Apennines which stand like a wall between Florence and Bologna. The winters are cruel in the Porretta Pass and they have made its people austere and hardy. The men of the clan lived by the land, cutting wood from the chestnut thickets and raising oats and maize in small and stubborn fields. Still higher, the rocky slopes are sparsely clad with birches and firs. The Marconis were landed gentry in this small society, living simply in the thin, luminous air on their holdings which spanned from Capugnano to the larger town of Porretta. On the back of a pew in the old church at Porretta I have seen the name *Marconi* carved in the chestnut. Though the wood is hard the letters are almost erased by age.

They were not rich, these Marconis, but they had the arrogant self-reliance which a countryside like theirs breeds. The habit of command was in their blood. They were prickly people, exacting and obstinate and courageous.

Giuseppe Marconi, Guglielmo's father and my grandfather,

was educated by priests. There was some thought of his entering the church, but it soon became apparent that he had no vocation. It was his younger, far saintlier brother, Arcangelo—later wantonly murdered by a thief—who took holy orders. Giuseppe turned instead to the management of his father's land.

His ambitions, more worldly than the priesthood, were larger than Porretta and so he became the first member of our family to leave the hills. While he was still young, he moved to Bologna where he could see the upland country he had abandoned on the horizon beyond the Emilian plain. Here, in 1855, he met and married Giulia de Renoli in the baroque church of San Pietro. That same year she bore him a son. Almost immediately afterward, she died.

Alone with an infant child, Giuseppe sent for his aging and lonely father, Domenico Marconi. The old man sold his Porretta holdings to advantage and came to Bologna. But the city was too much of a change for the mountaineer so he bought a place at Pontecchio, eleven miles out in the country. Villa Grifone was an ancient house, large, plain, and nobly proportioned. It still stands in rolling fields and vineyards looking out over a splendid view. Here old Domenico began raising silkworms and made a decided success of it while his son delighted in using his countryman's skill as an agriculturist to make Grifone's acres fruitful and beautiful. When Domenico died, Giuseppe inherited the estate and as he grew older lived there more and more each year.

An avenue of chestnuts led from the provincial road to the green-shuttered, stone villa. In front, an agreeable terrace was set with lemon trees in tubs. Fertile fields fell to the plain below. Beyond rose the mountains. Back of the house, a garden climbed a gentle rise and on its far side lay vineyards. Giuseppe spent most of his time here, a widower much alone except for small Luigi, until he met Annie Jameson in the middle 1800s. Annie Jameson was a pretty girl from Ireland with a glorious singing voice and a will of her own. It was her voice that brought her to Italy to study *bel canto,* the trip offered as consolation by her family because they had forbidden her to accept an engagement to sing at London's Covent Garden Opera House.

Annie's father, Andrew Jameson of County Wexford, had been born in Scotland. He migrated with his older brothers, who established the Dublin Brewery. Andrew built his own distillery at Fairfield. To this day it is known as The Still, though now it only grinds corn. The Andrew Jamesons and their brood of four daughters resided in an old manor with a park and moat, Daphne Castle of Enniscorthy. To such people at such a time, a career in opera for their youngest daughter was unthinkable.

The Jamesons had business dealings with the de Renolis who were bankers in Bologna, and so Annie stayed with them and, quite naturally, met their son-in-law, Giuseppe Marconi. She fell madly in love and, abandoning *bel canto* without hesitation, went home to ask her parents' permission to marry her Italian.

She can hardly have expected to get it. Everything about Giuseppe was unsuitable in their eyes. He was seventeen years older, a widower with a young child and, most heinous of all, a foreigner. The conservative, county, Scotch-Irish Jamesons were outraged—she could have made no more disastrous choice. Once more they denied their daughter her heart's desire but this time they had no consolation to offer. Annie bowed to their will. As a well-bred young lady she had no alternative.

Mr. and Mrs. Jameson, beguiled by Annie's habitual kindly gentleness, told themselves she had submitted gracefully. They saw to it that she went to all the parties and danced with all the eligible young men of Wexford that year.

Giuseppe in his Italian villa and Annie in her Irish castle were waiting, quite unswayed by the arbitrariness of her parents. Their love fed on the misery of their separation. When Annie came of age they decided, through letters smuggled to one another, to wait no longer. It was a decision as romantic as a Victorian novel, but less determined Victorians were prone to leave their defiance to their fiction and live in the staid and unbending manner of the Queen.

Giuseppe came up by coach and Annie down through England and by ship across the heaving Channel. Both young people bore the discomfort of their voyages stoically, on the high wave of their determination.

Giuseppe and Annie were reunited at Boulogne-sur-Mer, where they were married on the sixteenth of April, 1864. Then they crossed the Alps to Bologna.

The medieval walls of the ancient city with twelve clanging gates replaced for Annie the moated walls of her Irish home. She felt no sense of loss, taking Giuseppe's city to her heart as she had taken him. Annie loved beauty passionately, and Bologna, with its strong square towers and porticoed streets full of blue shadows at night, its intricate Renaissance palaces, mellow pink and gold by day, enchanted her completely.

Giuseppe took her through the narrow streets that form a diadem around the great square where the Cathedral of San Petronio stands, to a massive town house he had taken for the winter. Its tall windows were shuttered toward the street. Sun poured into the high rooms in the back across a walled garden.

One year after their elopement, Giuseppe and Annie's first child was born in the country at Villa Grifone. They named the boy Alfonso. Nine years passed before Annie had another child.

She came near dying the night that Guglielmo was born in Bologna. The windows were tightly shuttered to keep out the sharp crack of horses' hoofs and the rumble of carts over the cobbled street. Inside, the doctor came and went through the hushed, agonizing hours. At 9:15 on that Saturday morning, the doctor sent the nurse to tell distracted Giuseppe that he had another son.

Rejoicing filled the house. Emboldened by delight, the servants crowded into Annie's bedroom to congratulate her and admire her baby. An old gardener with genuine emotion and peasant tactlessness said, wonderingly, "What big ears he has!" Spent though she was, Annie flared up like a true Irishwoman and, family legend holds, retorted, "He will be able to hear the still, small voice of the air."

Reading backward I can see which characteristics the younger Marconi son took from each of his utterly different parents. From his father, that independence of spirit which is the mark of mountain men, the aloneness that is often dour, the ability to make do with what is available, and the fortitude. From his mother, a will

as stubborn as his father's, but matched with poetry and music and grace. And to her radiant complexion and fair coloring he owed his blue eyes and the golden hair that darkened as he grew up. Ultimately he was his own man, an aggregate of opposites: patience and uncontrollable anger, courtesy and harshness, shyness and pleasure in adulation, devotion to purpose and thoughtlessness toward many who loved him.

CHAPTER TWO

It is never easy to think of our parents as children. In time I have come to feel that I do know my father as a boy because I have learned to look back at those early years objectively. And they were important years, for it was the boy who made the vital discovery that led to the others in later life. So that the odd youngster with a passion for the machines and gadgets in the attic has become as real to me as the dignified and imposing man whom I called Daddy.

His own father, my grandfather, was firmly rooted in the Pontecchio acres he inherited after my great-grandfather's death and he tended them with proprietary pride and native skill. The boys and their mother, however, never spent an uninterrupted year there. My grandmother was always spoken of as delicate, and when icy winds blew across the plain from the Apennines and invaded the old stone house, she sought milder weather.

Often they went to Leghorn, the great seaport and naval base on the west coast of Italy. One of the Jameson sisters, now Mrs. Prescott, had settled there with her four daughters. It was an agreeable and convenient halfway point between England and India, where her husband, General Prescott, was posted. The ladies were enlivened by the companionship they found in the

English colony. The younger generation—the Marconi boys and the Prescott girls—melded into one large and close family.

Twice there were visits to England. Guglielmo was too small to recall the first one when they lived at Bedford, fifty miles north of London, in the Colleorton Villa, once the home of John Bunyan. Later he went briefly to Rugby but he was not able to tell me about that time because it was only the haziest of memories. Occasionally they packed up and spent a month or two in Florence, where they had many friends. Invariably they drove to Porretta, not for family reasons, but because the hamlet was gaining fame as a spa. In an age when taking cures was fashionable—it still was in my own youth—the Porretta waters were reputed to be miraculous for the skin. Guglielmo's mother went daily to the baths while her younger son stayed close to the house where they lodged, delighted because it was at the edge of a stream. Spring thaws turned it into a roaring river and he was contented hour after hour to play beside it.

Nonetheless Villa Grifone was Guglielmo's home. It was heaven for a child. I know because I was a toddler there myself. I see myself looking out of the pages of family albums wearing a wide-brimmed hat with an elastic under my chin and long, starchy dresses, in one photograph at the end of a harness whose reins my father holds high. He wears a straw boater with a wide band, jauntily, and a striped suit and vest and he is smoking one of his rare cigarettes. Or again, I have scrambled into a wheelbarrow to measure myself against an immense oil jar (my upstretched hand cannot reach the top) and I pose, very pleased, in the two-wheel pony cart with our nurse, Mrs. Simons, and Enrico, the coachman. There is a rabbit hutch to inspect, Mama to be consulted as she sits on the terrace under a silk parasol, and a splendid walk taken through tall grass with Daddy.

This was my father's world, as it was mine. For me it was a world filled with people. That was the way I liked it. For him the adventures that held the greatest magic came when he was alone. Even when he was quite tiny, the last of the Grifone servants of his day told me, he loved nature in the way a born scientist does, observing and wondering, gravely. He adored fish-

ing, that solitary sport, and it is proof of his later dedication that he gave it up uncomplainingly after his serious work began.

To his vexation, even summer vacations were interrupted. Guglielmo's lessons, sporadic during winter, took a more arduous turn in summer. Annie was determined that her sons be as fluent in English as in Italian, and set herself to teach them her language. A local grammar school instructor, Germano Bollini, was entrusted with grounding them in good Italian.

My father confessed to me once that he had small taste for such housebound drudgery. English at least was the lesser evil—he responded happily to Annie's soft, musical voice. Signor Bollini was a thorn in his flesh and he must have driven that pedantic man to distraction. Already the boy's mind was on other matters.

For relief Guglielmo escaped to his father's library. Greek mythology and Greek history were his early passions. Gradually, Achilles was supplanted as his particular hero by Benjamin Franklin, and the Peloponnesian War began to seem less enthralling than Faraday's classic, simple lectures on electricity.

Now and again Guglielmo could play hooky from schoolwork, but never from his mother's religious training. Annie was a devout Protestant and Giuseppe did not demur at having his sons raised in the Anglican faith though they had been baptized Roman Catholics. He had himself lived through the ferment attendant on Italy's unification. The Risorgimento, the resurgence of nationalism, affected Bologna materially. Intellectual and political persecution cut the number of students in Europe's oldest university. Ten thousand had thronged the arcaded streets of the town in the thirteenth century. Now there were a few hundred. Anticlericalism was inherent in the radical spirit of the movement. Moreover, in his early rejection of the priesthood, Giuseppe's apathy toward the Roman Catholic church was clear. So Annie was free each evening after supper to call the boys to her room and read them two chapters from the Bible in the King James version. As their English improved she had them read to her. When they went to church it was to English services in Florence and Leghorn.

At lessons, over the Bible, in the give and take of their lives,

Annie and Guglielmo developed a rare relationship. He was her heart's child. My grandmother had a deep-seated respect for the rights of other people. It was intensified rather than lessened when it came to very young people. "If only grownups understood what harm they can do children," she used to say vigorously to me. "They think nothing of constantly interrupting their train of thought." It was early apparent that her younger son was capable of intense, almost fanatical concentration and she left him in peace to reach his own conclusions.

Father Giuseppe was too unyielding, too much of a martinet to discommode himself for his boys. He was master in his house and children were far down in the social hierarchy. Guglielmo, off on his own tangents and indulged by his mother, constantly ran afoul of his inexorability.

I never knew my grandfather. I have been told he was charming; his humor dry, his wit quick, and his pride in his Annie enormous. Later, during the time his youngest son was growing up, the light mood of the early years had passed and for a youngster he was awesome.

More than any other time of day, the boy was likely to be in trouble at meals, when the family was expected to join Giuseppe in polite, improving conversation. Guglielmo found this superficial and tiresome. He dreamed along, his plate untouched, then exploded with whatever question possessed him. The youngest of the Prescott girls, Daisy, when she was at Grifone, was his special confidante, so he usually turned his query to her. To his father's annoyance it never had any bearing on the matter at hand. Daisy's answers, as eager as his questions, were sure to be way wide of the mark and would reduce him to shrieks of helpless laughter, at which point the heavy hand of paternal discipline descended.

There was one day when everything went wrong. Daisy had been taking painting lessons and was working in the schoolroom on her first oil. She later wrote me: "Guglielmo bounded in and sat down on a chair. Unfortunately I had put my palette down on it thoughtlessly not two minutes before and it was covered with fresh oil colors. I was studying my picture critically when a sudden exclamation from Guglielmo made me look up." What

she saw was that his white flannels were an omelette of color, which she tried frantically to wipe off with a rag doused in turpentine. She was making very little progress when the children heard the lunch bell ring. They washed their hands hastily and perfunctorily and dashed for the dining room. In Giuseppe Marconi's code lateness for meals was a major rudeness.

Across the table Daisy saw her cousin's face at one moment impish with the joke they shared, the next stunned, then contorted with misery. The turpentine was burning his small behind. Looking like a trapped animal, he wriggled from side to side. His father turned on him wrathfully.

"Guglielmo, sit up and sit still!" he thundered.

The youngster turned agonized eyes on his mother. She bowed her ear to his lips and when he whispered his predicament she excused him from the table and he fled while Giuseppe frowned gloomily.

In general, there was no deliverance from the militant routine of the household. I think now that some of the rigid adherence to discipline my father demanded of us, his children, dated back to his own upbringing at Pontecchio.

Certainly, the man he became grew out of those years. Before he was ten he was telling Daisy about "my electricity." She could make neither head nor tail of what he said but listened from utter loyalty. His chubby little-boy hands, later so strong and quick, were already nimble. He loved to use them on machinery and always had some project going. One July day he took Daisy's sewing machine apart and rigged it to a roasting jack. When she wept he was stricken. Unlike most repentant take-aparters, he put it back together again so it stitched as well as ever.

Although a solitary child, he was at ease with his cousins, especially his darling Daisy. When he was thirteen he led Daisy off to a far corner of the woods and dramatically showed her his current contraption—a small vat caught in writhing tubes. Like a good Jameson he was distilling spirits. Fortunately his parents never found out about that peccadillo; Daisy was no tattletale. But my father told me he was always in hot water those summers.

It was the crime of wastefulness that most infuriated Gu-

glielmo's father. Giuseppe was growing old. He was over sixty and his tongue was dour and biting, while what used to be a slight tendency toward parsimony was now unbridled miserliness. Guglielmo, in his pursuit of scientific sports, was guilty of extravagance and for this his father could not forgive him then or thereafter.

One incident precipitated a real crisis. The whole family was at Porretta, Annie out of the house each day at the sulfurous springs, Giuseppe visiting with old friends, the older boys off on their own. No one noticed that for days Guglielmo had been unusually distracted and silent. No one knew that he had "borrowed" Benjamin Franklin's *Life* from the Grifone library and brought it with him. Inspired by Franklin, he was making some experiments of his own.

Villagers passing the house saw the boy at the edge of the stream with a series of dinner plates he had contrived to line up like vertebrae through an elaborate arrangement of string. When they were all in place he shot high-voltage electricity into the string, sending the plates crashing onto the brook's stones.

The passers-by thought the younger Marconi boy was crazy and so did his father. Property was being senselessly destroyed. Even Annie, who could ordinarily temper her husband's furies, was powerless to stem his anger this time. From that day onward his father systematically ruined Guglielmo's mechanical apparatuses whenever he found them. Mother and son conspired to keep them from him.

It told on the child. He had been a friendly boy, his cousin, Henry Jameson-Davis, recalled after meeting Guglielmo when he was six or seven. To protect himself from his father, he learned a reserve which he kept all his life. His complete trust he gave only to his mother. A bond grew up between them that nothing later superseded.

The pattern of the boy's life encouraged solitariness. Guglielmo did not formally enter school until, at twelve, he was sent to the Istituto Cavallero on the Via delle Terme in Florence. This was his first opportunity to share the tribal rituals of his contemporaries. Like any other child, he wanted to be popular but

was ill equipped, having had no boy companions. His brother Alfonso adored him but Alfonso was nine years older.

It was already too late for him to become gregarious. Guglielmo had, however, the gift for individual friendships. At the Istituto he got to know a boy named Luigi Solari and, working together, they went to strange and lonely places in the years that followed. Solari was not sure whether he was first attracted to Guglielmo or to his pretty Irish mother. She came every afternoon and waited on the narrow pavement in front of the cream-colored stucco school building where she could watch the entrance to the corridor. To Luigi she seemed a little foreign and altogether adorable in her daring hats.

Her boy, Solari told me, was slender and delicate and habitually wore a stern expression. Luigi was not deceived by it. Despite the fact that they were not the same age and Luigi was in a higher school grade, he felt the magnetism of the younger boy and became the follower, Guglielmo the leader. This relationship remained constant. Solari, the disciple, was at pains to make detailed notes of their conversation as time went on and ultimately used these as source material for a valuable and devoted biography.

The expression on Guglielmo's face, construed by his classmates as arising from a sense of superiority, was actually a cover for shyness and worry. He was having a bad time adjusting to his new environment. Schoolboys can be cruel and the masters were not kind.

The principal made it a habit to dole out praise and blame after morning lessons. "Your Italian," he told Guglielmo at one of these sessions, "is atrocious. Now recite the Manzoni poem you have been studying. And speak up!"

Guglielmo started hesitantly. One line was enough. His classmates began baying like hounds on a fresh scent. They howled, slapped their thighs and embarked on elaborate pantomimes.

In another sort of boy, such a setback might thave induced an incurable moroseness—or been forgotten. Guglielmo was bruised but not permanently damaged. The experience simply threw him once more on his own resources. Fortunately his resources were strong and sufficient.

His belatedly begun schooling continued, but happily not in Florence. Giuseppe decided that the whole family should spend the next winter in Leghorn. His younger son was entered in the Technical Institute. Guglielmo was delighted. He knew Leghorn and remembered with pleasure how he had learned to sail on the inner harbor when he was nine. Five or six years later his father, in an untypical moment of generosity, gave him a handsome sailboat. With Daisy as crew, he rejoiced in tacking under the bows of oncoming Navy launches, an impudent abuse of the right-of-way granted sail over power which scared Daisy half to death.

Giuseppe engaged an apartment in the Viale Regina Margherita. For the boys, its greatest advantage was that it was only a few doors from where a family called Camperio lived. There were two sons, Giulio and Filippo, and one daughter, a minx of fourteen named Sita. Like Guglielmo, Giulio was a day pupil at the Institute and the boys became best friends. Later it was Giulio who helped Guglielmo build a pear-shaped zinc contraption on the roof to catch static electricity from thunderstorms. Indoors it was wired to a bell. The boys prayed for bad weather unceasingly and when it came and the bell tinkled they were in ecstasy.

That winter at Leghorn the Marconis and the Camperios were constantly together. Guglielmo hero-worshipped Filippo because he was at the Naval Academy which Guglielmo dreamed of entering. Alfonso fell in love with Sita who teased him heartlessly—Guglielmo was as head-over-ears as his brother but far too contained to lay himself open to ridicule.

The companionship of the Camperios reached into my own lifetime. They appear in our family album. Sita, beautiful and placid under a coronet of braids, holds my little brother Giulio in her arms while I squirm in the foreground, looking, I must confess, quite jealous at not being the center of attention. Sita is Giulio's godmother and she has married a Signor Meyer who is not half so handsome as Alfonso. Giulio Camperio, for whom my brother Giulio was later named, died early of what, in those days, was called "galloping consumption" and Guglielmo was not to be comforted. But before Giulio's tragic death, Guglielmo found companionship and gaiety at Leghorn. Along with the exuberant

horseplay of youth, the flirting, and games (Father used to boast to me that he always managed to hide close to the prettiest girl available during hide-and-seek), good Italian became as easy for him as breathing.

Almost effortlessly, too, and with keen delight, came music. Their father showed unaccustomed liberality again about lessons for both boys when Annie approached him for money. His pride in her musical attainments softened his heart and loosed his purse strings. Both boys showed talent, Alfonso for the violin, and Guglielmo for the piano, his nimble fingers quickly mastering the techniques of the keyboard. With the orderly mind of a scientist he was able to read and transpose at sight. Because of his mother he particularly enjoyed opera and accompanied her with great facility. When he was away from her he frequently played piano arrangements of operatic scores straight through for his own pleasure.

The boredom he had undergone in the improvised schoolroom at Pontecchio had been succeeded by misery at his first real school. Now at Leghorn, his education began to feed Guglielmo's eager mind. He no longer had to be prodded to get up in the morning or to leave the house at half-past eight. He was on his own and making good grades at last. On the theoretical side, Professor Giotto Bizzarrini's physics lectures so excited him that Annie arranged to supplement them with private lessons from Professor Vincenzo Rosa of the Liceo Niccolini. This was incredibly good fortune for a future scientist. Guglielmo forever after remembered the "clear and practical method with which Professor Rosa started me in the study of electrophysics."

When he was sixteen he was so fascinated that he built a machine of his own for transmitting electricity. Very rough it was, too. Daisy Prescott, who came in while he was constructing it, found him using blunt scissors to cut wire into half-inch pieces. ("His pretty fair hair was tossed and his clear blue eyes were shining," as she wrote me.) Not surprisingly he managed to cut not only the wire but a piece off his finger with the "treacherous" scissors. He stowed this sacrifice to science in a box and remarked

airily, "I'll get it stuck back on by and by. The chemist's is not far from here."

All his life Marconi's work was to be a fine balance between theory and practicality. He succeeded in translating his own and other men's concepts into workable terms, building prototype machines himself if none existed that would serve his purpose. He invariably knew how to operate his instruments as well or better than the technicians who worked with him.

The practical foundation was inadvertently laid at Leghorn. Guglielmo was introduced to a charming old man, Nello Marchetti, who was going blind. Partly from his pleasure in the man, partly from a sixth sense, the youngster found time in that busy year to read aloud to Marchetti and a fellow feeling sprang up between them despite the difference in their ages.

Marchetti had been a telegraphist at a time when it was a comparatively rare profession. When he discovered that the boy was intensely interested in electricity, he taught him, out of gratitude, the Morse code. On a telegraphist's key, set between pots of geraniums on a sunny window sill, the boy learned to tap out the letters of the alphabet. Here, for the first time he sounded the three dots of the *S*, the signal that he would one day send around the world by wireless.

CHAPTER THREE

The Marconi boys spent part of that summer of 1894 in the mountains of Biellese in the Italian Alps of Lombardy, at a remote and charming place called Santuario di Oropa. One day Guglielmo picked up an Italian electrical journal, or perhaps the "ardent amateur of electricity," as he later described himself, had brought it with him from the library at the University of Bologna.

Heinrich Rudolf Hertz had died on the first of January. The magazine contained an article about his extraordinary work with electromagnetic waves, written by Augusto Righi, whose lectures Guglielmo had audited the previous winter in Bologna. In Hertz's radiant discovery was the spark that lighted up everything young Marconi had been groping toward.

If this was the turning point in my father's life, it was also, in a real sense, a turning point in the evolution of the world we know and take for granted. Today it is hard to believe the dismaying difficulties of communication during what I like to call the Great Hush.

A young reporter, Winston Churchill, at the beginning of the Boer War, wrote of his trip aboard the *Dunottar Castle* to Cape Town with General Sir Redvers Buller, supreme commander of the British forces in South Africa.

"There was no wireless at sea in those days, and therefore, at this most exciting moment the Commander-in-Chief of the British forces dropped completely out of the world. After four days at sea, the ship called at Madeira where there was no news. Twelve more days passed in silence and only when the ship was two days from Cape Town was another ship sighted coming from the 'land of knowledge' and bearing vital news. Signals were made to the steamer, a tramp, asking for news upon which she altered course to pass within a hundred yards of the *Dunottar Castle* and held up a blackboard bearing the words 'Three battles —Penn Symonds killed.' Then she steamed on her way and the Commander-in-Chief, whose troops had been in action without his knowledge, was left to meditate upon this very cryptic message."

"Those days" were 1899, no more than a lifespan from today and three years after a patent for Improvements in Transmitting Electrical Impulses and Signals, and an Apparatus therefor had been granted to a twenty-two-year-old youth.

No scientific barrier is breeched in isolation; each breakthrough comes as a link in a long, unbroken chain. Scientific successor of Oersted, Ampère, Faraday, Maxwell, Helmholtz, Davy, and many others, Hertz had experimented with oscillatory discharges using a Leyden jar condenser and induction coils and succeeded in making small sparks stronger by adding metal reflectors. It was knowledge of this which galvanized Marconi into action during his summer holidays in the Biellese Alps.

The lad came back to Pontecchio burning to get to work. He read everything he could find at the University of Bologna library, and he saw as much as possible of Righi to learn more about Hertz and the Hertzian rays.

Guglielmo's mother was, as always, his chief aide in times of crisis. She understood that he must have a laboratory and she gave him the run of the top floor of the house. Ever since her father-in-law Domenico's day, the two big upstairs rooms, separated only by an archway, had been used for storing trays of silkworms. What space remained was ample for the instruments Guglielmo was assembling.

They were neither complex nor bulky, and the greater part of

them, along with replicas, can be seen in the Science Museum in South Kensington, London, today. There was, of course, the transmitter—Hertz's battery-powered "exciter"—that would cause a spark to leap across the gap between two ball electrodes. Induction coils were essential. They consist of a primary tight winding of wire over a soft iron core and a second winding over the first, arranged with many more twists. When periodically interrupted low-voltage electricity from a battery flows through the primary wire, it induces in the secondary coil the high voltage needed for transmitting. This high voltage leaps the spark gap and so forms an oscillatory discharge of electrical energy that is radiated not only across the gap but also outward in waves.

To record the waves set in motion by the leaping spark energy Hertz developed a primitive detector. An Englishman, David E. Hughes, had learned that the electrical discharge from a Leyden jar condenser would make zinc and silver filings cling together to form a conductor for electricity. In 1890, Edouard Branly, a professor of physics at the Catholic University in Paris, utilized the idea by devising a glass tube filled with metal filings that, connected to batteries and a voltmeter, acted as a sensitive receiver. Because of the action of the filings it was called a coherer.

The materials were simple—copper wire, induction coils, sheets of zinc, sheets of copper and a tubeful of filings, batteries, a meter —and somehow Guglielmo managed to collect and arrange them among the silkworms. The emotional climate of the house, however, made everything difficult.

Giuseppe protested furiously at the way his son was employing every waking hour. He mercilessly attacked Annie for having allowed her son to waste irreplaceable years. Guglielmo had dallied away his youth—and whose fault was it? Who encouraged him? Guglielmo had seen for himself that he was not scholar enough to apply for admission to the Naval Academy. Nor was he able to matriculate at the University of Bologna. He could only audit Professor Righi's courses.

Righi, brilliant scientist though he was, whose classes attracted students from all over Europe, was not encouraging, either. He

had allowed Guglielmo to sit in on his courses and work in his laboratory but it is likely that this was because Annie Marconi was his neighbor and she was persuasive.

The day that Guglielmo arrived home from his holiday he had saddled up his donkey and ridden over the River Reno that separated Villa Grifone from Sabbiuno where Righi lived, to discuss what was obsessing him. The professor did not catch fire. Theoretical studies, he pointed out reasonably, should precede research. There was nothing very new about the Hertzian waves. There was plenty of time. For eight years now the scientific world had known about them. He himself had experimented with short waves, shorter than those Hertz had known and they appeared to become weak and attenuated in upper air. Long waves, perhaps. However, there was no way known to generate sufficient power to create waves long enough to be sent any considerable distance.

Sir William Crookes had prophesied only two years earlier that waves which would act as signals could be sent through obstacles as formidable as walls or a London fog from the bright spark that jumped between the two balls in the exciter or oscillator, and Hertz had described and measured these waves. Nothing had been done with them except to consider them in lectures and to make observations of thunderstorms.

Righi's indifference goaded Guglielmo more than his father's complaints. No one saw more clearly than he that given the tools, and the tools were all present and waiting, other hands might do the job. He was harassed and driven by his acute awareness of how little time he might have from the day he started experimenting in earnest on the top floor until the day he could get his first patent.

"My chief trouble," Marconi said later, "was that the idea was so elementary, so simple in logic that it seemed difficult to believe no one else had thought of putting it in practice. In fact Oliver Lodge had, but he had missed the correct answer by a fraction. The idea was so real to me that I did not realize that to others the theory might appear quite fantastic."

Sir John Ambrose Fleming, later a close associate of Marconi's,

recalled in an address delivered to the Royal Society about forty years later that Oliver Lodge gave a demonstration at Oxford at this time. "He had on the table a Morse inker (so he tells me) and could have used it with a sensitive relay to print down the signals, but as he wished the audience to see the actual signals he preferred to use the mirror galvanometer. It is therefore questionable that on the occasion of his Oxford lecture in September, 1894, Lodge exhibited electric-wave telegraphy over a short distance."

Marconi locked the door of his laboratory and did not allow his eyes to stray to the distractions beyond the tall windows. The Reno ran sluggish past apple orchards and dark cypresses now that the spate of spring was over. Shining against the sky were the jagged Apennines. Guglielmo could no longer be lured by the outdoors he loved; he neither rode nor fished nor idled under the laden fruit trees. Only when he needed supplies did he get out his donkey and jog into Bologna, or to the University where Professor Righi, despite his disparagements, let him set up experiments in the laboratory, later to be repeated at home.

Giuseppe was punishing Guglielmo in every way he knew. Characteristically he considered money a powerful weapon. The young man was kept in such straitened circumstances that one day he sold his shoes to buy metal and wire and batteries. It was a flamboyant gesture, probably necessary at the moment but not as poignant as it would have been in the blacksmith's boy, Faraday. There were other shoes in the cupboard at Grifone and a mother who would always find means to keep her son going. His expenses were modest, for nothing but his work interested him. Among his papers I found the last notation he made on this score during the winter of 1894–1895:

Bread and salame for lunch	0.25
One apple	0.05
Stabling for the donkey	0.50
	0.80 cents

In Pontecchio, Guglielmo emerged from his laboratory so seldom that his mother, disturbed at his thinness, took to carrying trays

and setting them on the landing outside the closed door. His father fumed.

Some months later in London, Marconi described his first experiment to Luigi Solari. His sole objective had been to render an account to himself of the nature of the propagation of electrical waves. From the conversation that Solari recorded, and from the text of lectures my father delivered to the Royal Institution, and from family recollections, I can recapture something of what he was doing and the setting in which he was doing it.

If it seems rudimentary to a generation schooled to science, it did not to the nineteenth-century innocence of the Prescott girls.

That winter the weather was miserable, but Annie had foresworn her seriatim trips to stay with her son and, if possible, deflect his father's tantrums from the youngster whose eyes were dark with sleeplessness. Mrs. Prescott had sent her daughters to Grifone for a visit. A locked door was bait to Daisy and the first afternoon all four young ladies banded together and swarmed to the attic. They demanded admittance so persistently that at last Guglielmo let them in. Slightly abashed at what they saw, they stood nervously eyeing the jars and pots filled with water and two strangely curved pieces of wood covered, Daisy thought, with tin. Guglielmo explained that these were reflectors, which impressed but did not enlighten the girls. Daisy felt let down though she hadn't an idea what she'd expected.

"Well, Guglielmo," she said candidly, "there isn't much to see." Then, thinking that he looked disappointed, she added kindly, "What have you found out?"

He was not old enough to be beyond putting on the airs of the magician he had loved playing for Daisy when they were tiny, so short a time ago.

"Do you see this needle?" he asked grandly. "Watch while I put it on the table." He then took a mariner's compass and set it down on the opposite side of the room. "Now wait. Do watch, Daisy! I'm going to make it move without touching it."

Daisy laughed uncomfortably. She knew Guglielmo's tricks.

"Guglielmo then seated himself," she wrote later, "before an ordinary electric pear shaped glass (the ones we see daily) from

which a blue light played. He touched the small globe and in an instant both the needle and the compass began to move simultaneously."

This was altogether too easy. A thread or a wire, of course. She tramped firmly from compass to needle and ran a determined finger under and over each. Not so much as a hair. And no teasing laugh from Guglielmo. The girls did not know what they had seen but they knew with absolute certainty that it was wonderful.

The little demonstration in the attic was, if she had only known it, a personal triumph for Daisy. My father has told me that he hated to divulge a secret and the secret he kept locked in the laboratory was the greatest of his life.

At lunch that day the Prescotts could think of nothing but the weird sight they had seen and so they talked of nothing else while Giuseppe scowled and Guglielmo parried serious questions as to what he was doing and what it was for.

To read the notes and letters of that year at Grifone is to be spirited back into a past that is inexplicably touching. Here are Guglielmo's mother sheltering Guglielmo, his father's restive disappointment, the rare snatches of play introduced by the Prescotts. Against this childlike background a strange and isolating miracle was taking place. Agony and sometimes fear entered the upstairs rooms in that old house, but the boy worked on. "I did not lose courage," he said later, but he did lose his youth, taking on a taciturnity with which he cloaked his meditative nature.

There is one story of that time for which I have no proof, but it is entirely characteristic of the protagonists. As the experiments grew increasingly expensive—Guglielmo extended the range of impulses from across the room until they were sounding a bell on the ground floor, then added a ground and sent them to the end of the garden—the need to win over his father became more vital.

Giuseppe was still sulking, but he seems also to have been drawn by the excitement that swept the house. Guglielmo came to him, shyly, yet emboldened by his sense of achievement. His father was not inclined to let the boy off lightly. He demanded a demonstration. One click was not enough—it might be a fluke. He suggested three dots, the signal for *S* in the Morse code which was to become

Guglielmo's standard test. It worked and it convinced his father.

Crowding his first victory, Guglielmo explained that there were many things he had to buy and that he must have money to buy them.

Guglielmo's father treated his son's request for money as he would have treated the request of any businessman. First, he had the boy explain the principles of his invention. His wife, fearful of a hitch, interceded with a plea that he be allowed to proceed on faith. Giuseppe rejected this approach out of hand on the grounds that if Guglielmo had, indeed, opened up a new scientific field he would need to know how to get really substantial financing and he would have to get it from men who did not invest "on faith." This was dampening but also encouraging. Giuseppe had tacitly admitted that Guglielmo might have a future and that it might involve big business.

Painstakingly, step by step, Guglielmo traced the evolution of his discovery. Finally Giuseppe understood, but he hesitated because he understood that Guglielmo was only at the beginning. The almost insuperable hurdle, as he rightly saw it, was that wireless would be no more than a toy unless it could be driven to greater distances.

Desperate, Guglielmo pointed out that he had already reached beyond the thirty-foot length of the top floor, that he could signal all through the house, and beyond.

Giuseppe is supposed to have said that he would be delighted to hear when there was progress to report but now he hardly felt justified in investing his money. Guglielmo was sick with disappointment when suddenly his father showed unwonted generosity.

"In the mean time," he ended the interview, "here is enough money for the things you need in your work."

This was victory, but obstacles were Guglielmo's daily meat. They did not halt him. He returned from his visits to Righi confident that the doubts the professor raised in his mind could be overcome. Working with the long slender hands with deeply lined palms that his fellow scientists came to admire for their adroitness, he was modifying the Hertzian apparatus. For one thing, it was vital to redesign the Branly coherer which was crude and unde-

pendable. After endless experiments, Guglielmo decided that the best metals to use were nickel and silver, 95 per cent of the first, 5 per cent of the second, ground fine as dust. He narrowed the slit in which the particles rested and exhausted the air from the tube. Results with a vacuum were immeasurably better.

Most important of all, he rigged a wire aerial. Lodge had used a metal roof as an aerial but it served poorly and he had not taken the step Marconi took at Grifone.

Of his first major experiment, Marconi has left a full description. "I reproduced with rather rudimentary means an oscillator similar to that used by Righi; I likewise reproduced a resonator using as a detector of the electrical waves a tube of glass with pulverized metal based on much that was already published by Hughes, Calzecchi-Omesti, Branly and Lodge. By means of slabs of curved zinc [tin in the eyes of Daisy Prescott], I formed two reflectors which I placed one in front of the other at the maximum height permitted by my laboratory. At the center of the far room I put the detector of the electric waves and bound this to a battery."

That it worked, he proved to himself, and shared his secret with his mother on the night he went to her bedroom to fetch her.

It worked but it was extraordinarily clumsy. The particles in the Branly coherer clung together each time a signal was sent and remained that way. To free them for the next impulse, the operator was forced to destroy their cohesion by tapping the tube. Marconi had to find a cure, and did. "To shake the metal filings automatically I inserted a loadstone in the origin of the voltmeter circuit. This commanded a little clapper, placed where it could serve as a contact with the tube containing the filings. Every time I sent a train of electric waves, the clapper touched the tube and so restored the detector at once to its pristine state of sensibility."

The success of this device opened up the possibility of sending impulses rapidly, uninterruptedly. With Marconi's genius for the practical, he had made it possible to transmit the Morse code.

"It was precisely at this moment that I thought for the first time of transmitting telegraphic signals and of substituting a Morse machine for the voltmeter. The extremely weak current

available with my materials was insufficient to make a Morse machine function. I at once thought of reinforcing the current with a relay. And this I did later. For the present it seemed to me necessary above everything else to study the behavior of electric waves at an increased distance outdoors, outside the limited space of my laboratory. I had complete faith in the possibility. With this in mind I went to consult Professor Righi, who expressed grave doubts as to the practicality of my project. And indeed he was right, *senza presa di terra.*"

Senza presa di terra. Without the grasp of the earth. Here was the key that unlocked the door: grounding.

Waves of any nature were believed at that time to proceed in straight lines if they were short (or high frequency) and to be able to go around an object when they were sufficiently long. Marconi, trained in this school of thought, tried to increase his transmitting wave lengths to more than a meter.

At once trouble assailed him. The greater the wave length, the less the power radiated from the antenna so that to transmit a wave a considerable distance required an impossible amount of power. Again he found the solution, as he told Solari years later.

"In my first experiments outdoors toward the end of September, 1895, I considered increasing the dimensions of the transmitter in order to get waves longer than any that had been used up to that time—waves thirty or forty meters long. With this in view, I replaced the two outside balls of the Righi oscillator [which had four] with two slabs of sheet iron I got by breaking up an old tank for lamp oil. I did the same thing to the resonator.

"I found out then how to obtain waves at distances of hundreds of meters. By chance I held one of the metal slabs at a considerable height above the ground and set the other on the earth.

"With this arrangement the signals became so strong that they permitted me to increase the sending distance to a kilometer.

"That was when I first saw a great new way open before me. Not of triumph. Triumph was far distant. But I understood in that moment that I was on a good road. My invention had taken life. I had made an important discovery.

"Next I thought of substituting copper wires for the slab that I

had suspended in the air. These I separated from one another by wooden spokes. The slab on the ground I replaced with a piece of copper, buried in the earth. Once more the effect was impressive. The invention of the antenna-terra had been made."

However there was much still to be done. Alfonso was Guglielmo's ally, dear Alfonso, so loving and admiring of his younger brother, so generous in his support! To Alfonso was assigned the receiving apparatus and with the help of a farmer on the place, he was to carry it to greater and greater distances from the sending mechanism. He was also entrusted with a tall pole at the top of which was affixed a white handkerchief. If Alfonso received a message sent by Guglielmo, he was to lift the pole and waggle it so the handkerchief, waving in the breeze, could be seen from the house.

"But," Marconi doggedly continued, "I knew my invention would have no importance unless it could make communication possible across natural obstacles like hills and mountains."

The handkerchief was adequate to signal success from the fields in front of the Villa Grifone. It would not be seen if Alfonso went to the far side of the hill behind the house. For this he was armed with a hunting rifle and he marched sturdily off, up the narrow path past the farm buildings. It was the end of September now and the vines were heavy with purple grapes, the air golden. The walk over the rim of the hill took twenty minutes. Alfonso led, followed by the farmer Mignani and the carpenter Vornelli, lugging the antenna. Finally Guglielmo, watching tensely from a window, lost sight of the small procession as it dropped over the horizon.

"After some minutes I started to send, manipulating the Morse key connected to the Ruhmkorff bobbin.

"In the distance a shot echoed down the valley."

CHAPTER FOUR

That shot, the signal of victory from over the hill, changed the life of the Marconi family. Giuseppe was no longer required to take his youngest son's claims on faith. He was a shrewd man but he was a country man, so that though he knew that steps must be taken to release his son's invention to the public, he did not know what to do or how to do it. The Marconis turned for counsel, as village people do, to the most august men in their community—the parish priest and their physician and friend, Dr. Gardini.

Annie Marconi, who had needed no "proofs" to make her a complete partisan of Guglielmo's, took the adventurous lead. Giuseppe continued cautious. Dr. Gardini was of Annie's disposition and brimmed over with enthusiasm and suggestions. The priest confined himself to nodding wisely and interjecting an occasional "yes." Alfonso, his half brother Luigi, and Guglielmo himself, like their elders uninitiated in the large affairs of a large world, simply listened to the deliberations.

None of them knew that the proper first step would have been to approach the Minister of the Navy. Italy was building up her fleet, and if the minister had understood how wireless communication could put it in the forefront, he might well have championed the cause. As it was, the Marconis applied to the Minister of Post

and Telegraph, reasoning that he was the country's key man on communications and that Guglielmo's invention would therefore fall within his orbit.

A letter was addressed to Signor Sineo. It was a momentous document and many anxious hours went into its composition. Then Annie and Giuseppe, Guglielmo and his brothers, the doctor and the priest could do no more till the answer arrived.

In the days of waiting, Giuseppe set down in writing his dream for his son. His doubts and anger against Guglielmo had burned away like the morning mists on his native mountains. However, Guglielmo remained a visionary in his father's eyes, a thing impossible to understand and not entirely to be trusted. The boy's feet must be kept on the ground. Let him have some solid success and he would be in a position to buy a lordly property near Pontecchio where he could live out his life as a landed proprietor, the way an Italian gentleman should, and dabble in science, since that seemed to be his bent. His father's dream was not altogether wrong. Guglielmo's love of Italy ran deep and ineradicable. He was to suffer from homesickness all the rest of his life. If science had been for him a less demanding mistress, he would have lived joyfully among Italy's vineyards and fields, riding and fishing and delighting in the blazing skies. Some of the implacability that he developed was born of his frustrated passion for his country.

When Giuseppe's will was opened after his death in 1904, it was found that he had left Villa Grifone not, as is customary, to his eldest son, but to Guglielmo because it was there that he had invented wireless.

Guglielmo's beloved country rejected him when he was twenty. In refusing to underwrite his work, the Ministry of Post and Telegraph drove him out of Italy. When the letter came from the Italian government declining his offer, he was heavy with disappointment.

However since the invention could have application to ship-to-shore communication his mother believed they should take it to England, the greatest maritime nation in the world. It is possible that the family took their decision in part to soothe the feelings of their hurt and humiliated child. In fact it was a good move.

Their ties with England were blood ties, so the step was not wholly uncongenial.

Guglielmo said afterward, still smarting, "Mind you, Italy did not say the invention was worthless but wireless in those days seemed to hold promise for the sea, so off to England I went."

It was not, actually, as simple or as speedy as that. There were months of delay while Annie wrote to members of her family who, she felt sure, would understand what had to be done. Her nephew, Henry Jameson-Davis, got one of her letters. He had visited the Marconis when Guglielmo was six or seven years old and remembered him as bright and intelligent. "When he was twenty-two or three I was in considerable practice as an engineer in London," he recalled later, "and his mother wrote asking if I could help him; I replied that I would be glad to do what I could if he came to London to see me." Invitations were forthcoming from various members of the Jameson clan.

Annie and Guglielmo were ready, at last, to leave in May when Elizabeth Prescott was taken alarmingly ill in Florence. The voyage was instantly and indefinitely postponed while the two hurried off to take care of her. Though he must have been seething with impatience, Daisy reported, "Never can I forget how kind and sympathetic he was in every way." What Daisy did not know was that Guglielmo, keenly alive to the value of the weeks that were slipping away, walked off his impatience on the ancient cobblestones of Florence.

This was the end of Guglielmo's protected childhood with its family affection and irritations, its small gaieties and griefs. He was both young for his age, and old. Young because he had never been away to school or, in fact, away from his family at all. Old because he had grown up increasingly as a solitary person, contemplative, creative, and apart. In England, where his contemporaries had finished their university years and were launched on careers he would have seemed, in the ordinary course of events, naive and unsophisticated. He was, however, so sensitive and so wrapped up in his work that he drew a cloak of dignity around himself. The men he met were invariably surprised to find him so young but no one ever treated him like a child.

Yet he was little more. A picture taken in the park at Grifone shortly before he left home shows him beside his mother looking touchingly young in his prim, dark suit, and high-collared white shirt. The sun is in his eyes, yet he looks earnestly into the lens. In the Italian sense of the word, which recognizes that the finest of our arts and manners have always been provincial, he is simple and provincial.

It was not until February of 1896 that Annie and Guglielmo set out for England. At this hour of his separation from Italy began the apparent division in Guglielmo's nature, which puzzled many of his friends. I say "apparent" because I believe that basically he was a man of *unitá,* a rare oneness. Nothing deflected him from what he wanted to do. If his personal life was unhappy that was because there was so little room left over for it.

Once while he was working at Poole, near Bournemouth, he went out to stretch his legs along the beach, late one afternoon, with three of his engineers. The tide was going out and the breakwaters were exposed. The men idly lobbed stones at them, sometimes missing, sometimes scoring a hit. One of them dared Marconi to take a shot. He picked up a stone and threw it for a perfect hit. Perhaps, one of them hazarded, it had been a lucky accident? He should try again. "Why should I?" Marconi answered. "I said I would hit that post and I have hit it. Isn't that enough?" He was not a man to scatter his shots.

The leave-taking on the station platform in Bologna was as emotional as leave-takings are likely to be when the departure is for a long time and the future in doubt. There was considerable luggage. One piece became famous. It was a black box containing the apparatus on which hung Guglielmo's career. He had packed it himself, locked it himself, and he carried it jealously himself. Guglielmo was nervous, Annie tearful. Giuseppe rose to the occasion by reassuring her that whatever happened, he knew she would have a pleasant time with her family. Handkerchiefs were pulled from pockets as the train moved out. Annie and Guglielmo leaned from the window of their compartment and waved at the receding figures. Guglielmo, who was always a bit of a dandy, for travel affected a tweed deerstalker hat in the manner of Sherlock

Holmes, peaked fore and aft and decorated in front with a button. Annie was plainly dressed, as became a Victorian matron undertaking a considerable journey, in a dark suit and laced walking shoes, her hat tied on with a voluminous veil.

Ahead of them were the Alps and beyond was England and years of fog and rain for the boy, storms and blizzards at sea, a half world removed from the hot Italian sun he loved. Here and now was nothing but uncertainty.

There is to me something supremely poignant about their march on London—Marconi, in his funny hat, a country boy with the secret of the clamorous years to come packed in a black metal box. Like Dick Whittington he came to take London but unlike Dick Whittington, he had his mother with him.

CHAPTER FIVE

Over thirty years earlier Annie Jameson had crossed the Channel to marry the lover her family so disapproved. Now the crossing was again as daring and dismaying. She was leaving home with her son for what might prove a chimera. They huddled, that uneasy pair, in the dim and dingy cabin, each brooding on what lay ahead. A shocking blow fell half an hour after they set foot on British soil.

Guglielmo had continued to cling to his black box but in the customs shed, he was forced to surrender it to the inspectors. They found wires and batteries, strange shaped pieces of metal and dials and they reacted as officialdom is prone to. Had not Her Majesty Queen Victoria been shot at three times while she was driving along Constitution Hill? Had not the President of the United States been assassinated in 1865? And all right-thinking Britishers were still appalled at the murder of the French Republic's President, Carnot, in 1894 by an Italian anarchist. The bureaucratic memory is long and the bureaucratic mind by nature suspicious. Incited by Guglielmo's replies to their questions, which, as they were not understood seemed evasive, and their own dutiful sense of importance, they manhandled the foreigner's mysterious box. Its contents were broken beyond repair.

The travelers arrived in London in the lowest imaginable spirits.

Here things took a turn for the better. Cousin Henry Jameson-Davis was on the platform at Victoria Station to meet them. Henry was about thirty at the time, handsome and blond with piercing blue eyes and infectious enthusiasm. I remember him years later exceedingly deaf but still striking and genial.

He was as good as the word he had sent to Grifone and placed himself protectively at the disposition of his two relatives. As a man of the large London world he was touched by their helpless naïveté. Henry at once bundled them into a horse-drawn cab and took them to stay with another Davis cousin. Guglielmo was shyly relieved and let his splendidly confident new friend shoulder responsibility for them both.

Henry promptly busied himself with assembling the materials Guglielmo required to replace the smashed apparatus and as he worked with the younger man he began to develop a warm personal interest in him and what he was doing. He took him to one of the best patent lawyers in London to begin establishing Marconi's rights in his invention.

Annie was unschooled in such matters but she realized that their sojourn in England would be a long one. She did not wish to impose on her hosts indefinitely, so she set about finding a home of her own.

Because she was a matron unaccompanied by her husband (at the time a slightly questionable estate) it is easy to see why she found her way, almost automatically, to Bayswater. In the nineties, this borough of London was at its Victorian apogee. The neighborhood where it bordered on Kensington was solidly upper middle class. The houses were substantial and decorous with classic columns framing their front doors and ornamental wrought iron outlining their balconies. Small, tidy front yards were walled and one entered through paneled wooden gates. For a pittance, maids "obliged" and relieved their mistresses from the seamy side of housekeeping.

"To Let, Furnished" meant rooms muffled in velvet portieres, red or green, and endless bric-a-brac on endless whatnots. The very air was stuffy and stuffiness was precisely what a lone woman wanted. It was tantamount to respectability.

That is why Annie Marconi, accustomed though she was to the airiness of the high, cool rooms of Villa Grifone and to her own staff, not only took lodgings at 71 Hereford Road but, when she moved the following year to 67 Talbot Road, the house she settled in was indistinguishable from the first one and only a few blocks from it. There were compensations which she had come to cherish. A half dozen green squares nearby opened vistas of the sky and Kensington Gardens was little more than ten minutes walk away. They were neither of them townsmen and at times even their quiet end of London seemed stifling.

When their luggage was unpacked and their possessions arranged, Annie gave herself whole-heartedly to doing everything she could for her son. The two of them retreated into their rooms, drew the monstrous curtains against the leaden air and went to work. For four months Guglielmo devoted himself to the Herculean task of preparing the patent papers.

He was in a feverish hurry, literally and figuratively, for all his life when he was disturbed he actually did run a temperature. The specter of being nosed out by another man haunted him. "I argued that there must be more mature scientists who had followed the same line of thought and arrived at almost similar conclusions." He was mature enough, however, to undertake the exposition needed for patents with persevering care. "I had to protect my invention against every possible counterfeit and against a variation of secondary importance." So he sat and wrote what had to be written in that fluid hand which suggested a race to keep up with the quick processes of his mind, and his mother copied it all in her fine, copperplate script. The typewriter had already been made practicable, but all of the early agreements of my father's which I have seen were laboriously hand-written.

In the evenings there was often company. Henry, who had originally been drawn into the project from family feeling and native kindness, became more and more excited about it. He brought physicist friends to call with geniune pride and they in their turn were delighted with what they heard at Hereford Road.

On the second of June, 1896, satisfied with the papers on which he had been working, Guglielmo officially deposited a provisional

specification of his invention in the London Patent Office. On March 2, 1897, this was followed by a complete specification with eleven drawings for Improvements in Transmitting Electrical Impulses and Signals, and an Apparatus therefor. This was accepted on July 2, 1897, when Patent No. 12,039 was granted him. The story the first paper tells is summed up in the opening: "I, GUGLIELMO MARCONI, of 71 Hereford Road, Bayswater, in the County of Middlesex do hereby declare the nature of this invention to be as follows:—According to this invention electrical actions or manifestations are transmitted through the air, earth or water by means of electric oscillations of high frequency." The rest of the statement is short and relatively simple, though the sentences are long, and contain one endearing idiomatic lapse. He refers to a "perturbating" effect.

England is very beautiful in June, though to a man as intensely Italian as Guglielmo that June could have seemed only a pale replica of the spring he knew at Pontecchio. Marconi, whose patriotism grew fiercer through the years of his expatriation, was even this early suffering from chronic homesickness. He resolved to reserve the use of the patent when it was granted insofar as it might apply to Italy.

"Then, having established my priority in this new system of communication, my next thought was how to launch my invention." It would, he knew, take more thousands of pounds than any one family could raise, and an incalculable length of time.

The race had been won and now the Marconis proceeded with customary caution. They got advice from the family in Italy and more of it from the family and friends in England. "After much consultation my parents and I were advised to obtain, before all else, a favorable opinion from a person of indisputable public authority."

The British post office then, as now, had charge of everything to do with communication. The Napoleonic Wars and the Industrial Revolution had combined to make England queen of the seas. One of the great problems which fell to the post office was how to get word of approaching storms to the lightships stationed to prevent shipwrecks. The solution lay not in cables (though they

were in the province of the post office) but in the hope of wireless.

No one was more keenly distressed by the loss of life and goods at sea than William Henry Preece. As an engineer he had been working on wireless. Altogether he was the logical man to go to with an invention which could speak through the air to lonely guardians of the sea lanes. Preece was engineer-in-chief of the post office and in due course would be knighted.

Guglielmo had found his man. He needed only to reach him under properly impressive auspices. By good fortune Henry Jameson-Davis had a young friend who had become something of an habitué of Hereford Road and had seen demonstrations there of Guglielmo's invention. Alan A. Campbell Swinton was earning a name for himself by his research and he knew Mr. Preece. He readily agreed to arrange for an interview and wrote a letter of introduction:

Dear Mr. Preece,

I am taking the liberty of sending to you with this note a young Italian of the name of Marconi who has come over to this country with the idea of getting taken up a new system of telegraphy without wires, at which he has been working. It appears to be based upon the use of Hertzian waves, and Oliver Lodge's coherer, but from what he tells me he appears to have got considerably beyond what I believe other people have done in this line.

It has occurred to me that you might possibly be kind enough to see him and hear what he has to say, and I also think that what he has done will very likely be of interest to you.

Hoping that I am not troubling you too much.

Believe me
Yours very truly,
A. A. C. Swinton

W. H. Preece, Esq., C.B.

One morning Guglielmo presented himself at the General Post Office, a vast two-block complex of buildings in St. Martin's-Le-Grand. There the young inventor met Preece. This gentle, bearded

Welshman was sixty-three years old, courtly, and humane. One of his colleagues spoke of him lovingly as a "true Victorian gentleman." Despite the discrepancy in their ages, they liked and trusted each other at once. Preece spoke later of Marconi's having "proved himself open and candid." From an Englishman, describing an Italian boy, this was praise indeed.

There was only one witness to what happened the day the two men met. P. R. Mullis was boy assistant to Preece. His main duty was to look after a large case that contained all sorts of engineering equipment—telegraph keys, sounders, cable samples and such heterogeneous antiquities as fragments of old Roman water mains found during excavations. To judge from the account he set down in 1940, he had the charm and amiability to assume certain ambassadorial functions.

"Mr. Probert (the electric light superintendent) brought into Mr. Preece's room a young foreigner who was introduced as Signor Guglielmo Marconi. He had with him two large bags. After mutual hand shakings and while the Chief cleaned his gold rimmed spectacles, the contents of these bags were placed on the table and seemed to consist of a number of brass knobs fitted to rods, a large spark coil and some odd terminals, but most fascinating of all a large sized tubular bottle from which extended two rods. So far as could be seen, these terminated inside the bottle on two discs, very close together. Between them could be seen some bright filings or metal particles.

"This immediately took the Chief's eye and was obviously, by the careful way it was handled, something of great importance and certainly of particular interest to Mr. Preece."

Master Mullis seems to have returned to his work at this point. He noted nothing of the scientific talk that filled the rest of the morning. But, friendly and attentive, he recalls that presently Mr. Preece pulled out his large gold hunter watch and said that "It has gone on twelve. Now take this young man over to the Refreshment Bar and see that he gets a good dinner to my account, and come back here by two o'clock."

Mullis continues, "I had got to like this quiet young foreigner with his quaint English . . . and dextrous manner. We had a good

dinner and over our basins of tea (since tea in those days was not served in ordinary cups) he told me of his native land. [How this theme recurs!] Then with plenty of time to spare we strolled up Farringdon Road where my new friend was very interested in the number of kerbside stalls with their accumulation of fruit, junk and old books and things."

Even on a heady spring day, sixty-five years ago, they must have taken their leisurely way to Newgate Street, seeing St. Paul's great dome from one angle after another and hearing the chiming of Bow bells, walked along Holburn Viaduct and climbed down into Farringdon Street, which seemed so matter-of-course to the Englishman and so odd to the Italian.

They were back punctually at two—Guglielmo was as punctual as his father—and by now Mullis was determined to miss nothing. I think that they had discussed more than flower stalls on their walk and he had an inkling of what was in store. Mr. Preece had not returned and together they sat down to wait a few minutes outside his office.

"The Chief came along and as we entered the room I noticed that everything was just as left, with the exception of a piece of paper which had been placed under the contact of the telegraph key. This was removed and after one or two preliminary adjustments to the connections and brass balls by Mr. Marconi, the key was depressed and immediately the bell on the adjacent tube commenced and continued to ring. Mr. Marconi then went over to the glass tube, gave this a few sharp taps and the bell ceased ringing.

"I knew by the Chief's quiet manner and smile that something unusual had been effected. The following day and the rest of the week experiments were run off."

Mullis was an eager assistant during the earliest days and he was charmed by Marconi's courtesy, characteristic of him in all his dealings with other men; he did not say "I will do thus and so . . . ," but, "We will. . . ." It is a clue to why the men who worked with him were dogged in their loyalty.

"At the end of each day," Mullis notes, "Preece went home to Wimbledon in his brougham."

Suddenly the momentous strangeness of what has happened is lit up by Mr. Mullis's wonderful account. *Preece went home to Wimbledon in his brougham!* I hear the gentle, measured clop-clop of his horses' hooves sounding through the darkness of the horse-drawn city. The little carriage left town, for Wimbledon was no part of London in that era, and traveled the last of the eight miles that separate it from Charing Cross out into suburban countryside. Back in Hereford Road where, I am convinced, the "Chief" dropped Guglielmo on the way (the Underground had not been built and Bayswater is far from St. Paul's) the Marconis talked over the accomplishment of each day together and with the friends who gathered, engrossed, around their parlor table.

No one knew or could imagine the changes that were being made in their familiar, insular world. The clicking transmitter on the table in Bayswater was signaling the end of a way of life.

Nor could any of them foresee that the house in which they sat would, in the next century, suffer many changes, most of them for the worse, and one that I find glorious. To its façade the London County Council has affixed a circular blue plaque on which is lettered in white:

GUGLIELMO MARCONI
1874–1937
THE PIONEER OF
WIRELESS
COMMUNICATION
LIVED HERE IN
1896–1897

CHAPTER SIX

William Preece was a staunch colleague in the days ahead. He offered Marconi the use of his own laboratory, where he had been searching for the answer the younger man had found, and arranged for him to give demonstrations before other post-office officials.

Moreover he allowed his protégé to annex one of his most valuable assistants, George Stevens Kemp. My father told me that he set up one of his first demonstrations on the roof of the Post Office in St. Martin's-Le-Grand where he planned to signal to the Savings Bank Department on Queen Victoria Street. When he looked over the ornate stone balustrade, he saw a red-headed fellow watching him curiously. The man on the pavement caught my father's eye and shouted up, "What are you doing there?" Marconi called back, "Come on up and I'll show you."

The onlooker arrived on the roof with such remarkable promptness that my father believed he had scrambled up the drain. (I sincerely hope not for the Post Office is a towering eight stories high.) The second George Kemp reached the rooftop, he went to work for Marconi, and continued to work for him forever after. In 1896 he was an ex-petty officer in the Navy, employed at the Post Office as one of Preece's helpers. Marconi's staff was beginning to form.

In *Marconi, the Man and his Wireless,* Orrin E. Dunlap reports that he heard from a Marconi associate, "It was natural that an inventor of Marconi's personality and ability should attract the cream of the engineering crop. He had a fine collection of experts. George S. Kemp . . . was his first assistant. . . . Andrew Gray was Marconi's chief engineer, R. N. Vyvyan, who joined up in 1900 also on the engineering staff, was a graduate of a big university, perhaps Oxford or Cambridge; he was a . . . man with wide acquaintance in government circles. He jollied the officials when documents were delayed. We called him the red-tape breaker."

The first demonstration at which Kemp assisted was a revelation to the witnesses assembled: it carried better than half a mile and the signals' effectiveness was not diminished by passing through intervening masonry walls. It led to Preece's asking Marconi to conduct other demonstrations in open country and on a far larger scale.

Marconi's startling invention was being widely talked about in scientific circles although there was considerable skepticism as to precisely what he had accomplished. Lord Kelvin, later closely associated with him, was one of the early doubters. "Wireless," he is supposed to have snorted, "is all very well but I'd rather send a message by a boy on a pony."

In Preece, Marconi always had a stalwart supporter who fought his private battles and also defended him publicly. On June 4, 1897, lecturing on telegraphy without wires—the word *wireless* was still a novelty and *radio* had not even been thought of—Preece described Marconi's invention and refuted the contention that he had contributed nothing new: "He has not discovered any new rays; his receiver is based on Branly's coherer. Columbus did not invent the egg but he showed us how to make it stand on end, and Marconi has produced a new electric eye, more delicate than any known instrument and a new system of telegraphy that will reach places hitherto inaccessible. . . ."

A first step was taken in that direction when Marconi's modern machinery, his kites and poles, went up in the spiritual shadow of ancient Stonehenge. On the rolling Salisbury Plain, the sending apparatus was housed in a shed they all called the Bungalow, and

the receiving apparatus was placed on a hand-drawn military cart to give it mobility. Roughly made copper parabolic reflectors were mounted on each side of the detector.

The first signals came in from a distance of a hundred yards, the next covered a mile and a quarter, then six and finally nine miles.

"La calma della mia vita ebbe allora fine," Marconi told a friend —the calm of my life ended then.

Since the experiments had been conducted under the auspices of the post office and Army and Navy personnel, he was quite right. The press reported them with furious excitement and Marconi was besieged with letters from all Europe, America, even Japan. It occurred simultaneously to numerous gentlemen, I fear many of them unscrupulous, that it would be a fine thing to be Marconi's agent. Their letters remained unanswered. Others, from women, and especially one who wrote that his waves made her feet tickle (variations of this kind of reaction were never-ending) suffered the same fate.

Some were serious, and the most gratifying came from home. It contained an offer from a bank in Milan of 300,000 lire for rights to his invention. His father, beside himself with pride, advised Guglielmo to accept and buy the next-door property at Pontecchio, Villa Banzi. In his letter, he enclosed a list of the livestock which would come with the place and spoke of his joy at seeing his son so successful that he was in a position to make this purchase.

Guglielmo refused. He was certain not only that his wireless was worth infinitely more, but also that he must go on working on it for a long time, perhaps for the rest of his life, to make it the thing he believed it could be. He withdrew from all negotiations, neglected his mail and went back to London where, with his mother at 67 Talbot Road, he dug in to study.

He had a long way to go and he knew it. That whole winter he spent studying theoretical physics. In addition to the obvious, standard works on the subject, he read everything currently appearing in England, Germany, Italy, and America on electric waves.

In the spring of 1897, with Kemp in attendance, Marconi was

ready to test transmission of wireless over water. The Bristol Channel was chosen. Near Cardiff, off Penarth and Lavernock Point in the mouth of the Severn there are several islands: one is Steep Holm, another Flat Holm. From Flat Holm's lighthouse, Preece had tried to show the relative effectiveness of passing magnetic waves through air and water.

For the distance of three miles, Marconi discarded reflectors and used a ground and vertical air wires, fixed to poles. At a greater distance, eight miles, between Lavernock and Brean Down near Weston-Super-Mare, he sent the wires up by kites. A cliff drops 20 yards to sea level at Lavernock, and a pole with a cylindrical zinc cup, two yards by one yard, on the top, gave another 30 yards of height. An insulated copper wire ran from this to one side of the detector at the top of the cliff while from the other side, a second wire dipped into the sea. This was the receiving apparatus. The sending apparatus was at Flat Holm.

In the first two days of experiments, nothing happened. Then Marconi had an inspiration. He carried the receiver down to the beach and so lengthened the aerial to 50 yards.

The world was watching. Representatives from many countries were on hand to see what the results would be, among them a cab driver, Mr. Henry Matthews. "I can see the young Marconi now," he told a Cardiff newspaper reporter fifty years later when a plaque to Marconi and Kemp was unveiled, "He was so keen, so vital about what he was doing. I leant against this very wall and watched him and Mr. Kemp preparing for their experiments. I little thought then that I would live to see the day when all these people would come to the church to honor the young Italian. . . ."

Another watcher was a German professor, Adolphus Slaby of Charlottenburg, who had himself been "occupied with similar problems" and had transmitted waves of 100 meters. He was invited by Preece to see these experiments.

On the third day, the signal rang out clear and unmistakable. Slaby said shortly afterward, "It will be for me an ineffaceable recollection. Five of us stood around the apparatus in a wooden shed as a shelter from the gale, with eyes and ears directed toward

the instruments with an attention which was almost painful. The hoisting of the flag . . . was the signal that all was ready.

"Instantaneously we heard the first tic-tac, tic-tac and saw the Morse instruments print the signals which came to us silently and invisibly from the island rock, whose contour was scarcely visible to the naked eye—came to us dancing on that unknown and mysterious agent the ether."

Greater things followed on the fourth day: communication was established over the eight miles to Brean Down, a distance that was historic. Said Slaby, I have seen "something quite new. Marconi has made a discovery. He was working with means the entire meaning of which no one before him had realized." It is sad to reflect that there were in England still scientists to be won over.

At about this time, Marconi was faced with that personal problem which continues to plague the young: military service. This seemed to mean that he had only two choices open—both heartbreaking: either drop his work and return to Italy for three years in uniform, or become a British subject, the latter course heartily sponsored by his English relations. His patriotism warred with his scientific ambition. Marconi's work was in a critical phase, as the world knew the nature of what he was doing, and other men could carry it forward without infringing his patents.

Unconvinced by the Jamesons, he turned to a fellow countryman, General Ferrero, the Italian Ambassador. Italy's representative in England was particularly sensitive to any show of power in maritime affairs. Guglielmo, in reserving the Italian rights of his patent, had left the door open for Italy to use his invention and he was rewarded now.

The King gave Marconi permission to stay in England. Inasmuch as he owned a boat in Leghorn, His Majesty assigned him, as a naval cadet in training, to the Italian Embassy in London. The irony was not lost on Marconi who, less than a dozen years before, had been ineligible for the Naval Academy at Leghorn. But he was relieved and pleased. With utmost gravity, since he was at no time called upon to perform any duties in his new role, he sent his pay check monthly to an Italian hospital in London.

CHAPTER SEVEN

By April 25, 1897, his twenty-third birthday, Guglielmo Marconi's life was hopelessly in reverse. At an age when most young men, fresh out of college or university, are starting their careers, he had made his key discovery and achieved some substance, a great deal of power, and the earliest of the procession of honors with which he would be increasingly loaded in succeeding years. The calm of his life was ended in every conceivable way.

The fact that he himself knew it is some measure of this remarkable young man. He was well aware that to be hurtled into the position of chief over men of high professional standing, almost without exception older than he, was not going to be easy.

I have talked to some of these colleagues and through their eyes I see a new person taking shape. His shyness was never dissipated yet the façade he was carefully building covered it. His assistants tell me that he invariably made it clear who was in command (they called him "Mr. Marconi"), at the same time holding himself ready to pitch in at any kind of job that needed doing. The wonderful hands were more expert than theirs. He could get a kite in the air when all of them failed. His patience and persistence, the sources of his strength, grew as did his preoccupation. My mother says that one day at Eaglehurst she brought important visitors to his laboratory. He showed them around, polite and cordial, and had

tea with them, but afterward could not recall that they had been there.

Wherever I go I meet people who knew my father. Men who sat with him after dinner shrug in a way that implies, "Dull sort of fella." He would not discuss his work with laymen and he had no other interests. Women got a livelier impression, since he was incurably susceptible. Passing acquaintances remember him in various ways: as elegant in dress and bearing—and aloof; or that he enjoyed shuffleboard on his multitudinous sea voyages and loved to romp with children; or that he would play the piano for hours; or as a shadowy figure.

Having studied his life, I find that the paradoxes in his nature, just beginning to be evident, have a logic of their own. He was vain in that he accepted his genius, but not conceited. He was jealous but he envied no one. His delight in tearing down the accepted theories of physicists was impish. He was audacious, it took audacity to propose throwing an arc of waves from here to heaven knew where, but he backed his boldness with precision.

Marconi's work demanded solitude for intense concentration but he could not, and in truth would not, free himself from distractions. While one side of him hated them, he voluntarily shaped a personal life that put him at their mercy. His temperament was mercurial, flashing from delight to despair. The despair came either from the complications of his life, social or commercial, or from failures in his work; the delight, from business and scientific successes and from the long hours when he probed the mysteries of universal space.

Two external events made the year 1897 immensely important in Marconi's development. He returned to Italy at the invitation of her Navy and he formed his own company.

That astute diplomat, Ambassador Ferrero, was again Marconi's good angel. He informed his government that British naval circles and investors were paying serious attention to the results of the Bristol Channel experiments. Then he invited the inventor to lunch with Captain Bianco, his naval attaché. The Captain reacted promptly and wrote to Benedetto Brin, Italian Minister of the

Navy, who telegraphed Marconi, asking him to demonstrate his new wireless for the Italian Royal Navy.

Guglielmo had left home a year before, a slightly ludicrous figure crowned with the funny hat and clutching his outsize black box. He came home a man of stature, and his recollections have the quality of an adolescent dream, the tiny details as large as the great happenings. Through it all he was inexpressibly happy.

He was scheduled to appear first in Rome at the Palazzo di Sant' Agostino, seat of the Ministry of Marine. The demonstration came near to being a debacle. He needed a stick to elevate the aerial wire. Senators, deputies, generals, and admirals looked helplessly around them while assistants raced down corridors hunting futilely for a rod of some sort. It was Marconi who spotted a broom and handed it to one of the dignitaries to hold as high as he could. A second broom was produced for a second instrument on the floor above and the transmitter began to spell out *"Viva l'Italia,"* making, he recalled, a "great impression."

The Association of Italian Electrotechnicians gave him a dinner at a restaurant called Il Pozzo di San Patrizio and here he met his professional compatriots for the first time.

The following morning he was bidden to the Quirinal. He took time to write to his family of the event, though they knew from the press exactly what was happening to him. King Umberto shook his hand, smiled, his great eyes shining, congratulated him and, in the Italian manner, wished him "good auguries." Queen Margherita granted a special audience that impressed and dazzled him. He said she asked questions which showed her culture.

From Rome a naval party went up the coast by train to Spezia, Italy's chief naval base. San Bartolomeo in the harbor already housed electrical installations. Guglielmo set up his sending apparatus in the arsenal, his receiving station on a vessel, so that he could test reception while she was at anchor in the bay and underway in the gulf.

Success was not complete. John Joseph Fahie wrote less than two years later, "The results were unsatisfactory: signals came, but they were jumbled up with other weird signals, which came from the atmosphere (the weather was stormy) in the way which

telegraph and telephone operators know so well. On the fifteenth and sixteenth (the weather having moderated) better results were obtained and communication was kept up at distances of up to seven point five kilometers."

This was not the end. Marconi transferred the receiving mechanism to the ironclad warship *San Martino* and raised the elevation of the shore aerial to 34 meters and the ship aerial to 22 meters. Signals were good up to 12 kilometers and fair at 16 kilometers. However, when funnels, iron masts, and wire ropes were in line with the shore, reception was poor. When the vessel steamed between the two tiny islands, Tino and Palmaria, so that the coast was obscured, signals were capricious.

Despite this, the Spezia demonstrations ended with the kind of riotous public celebration the Italians love so much and do so well. Solari, now a young officer, saw it all. The wharf, he says, swarmed with sailors and civilians on holiday. The royal band played in the gardens until a loud voice broke in proclaiming grandly, *"Arriva Marconi,"* at the approach of a steam launch whose siren let off five ear-splitting blasts. Down the gangplank he came, surrounded by Navy brass, to join the gala. Not even the Navy realized that he had taken a mighty step that day: his receiver, in the maximum test, had been out of sight, below the horizon.

The letter he had written his family just before leaving for the Quirinal explained that it was essential for him to go almost immediately to England, where his company was being formed. Giuseppe's reply was written in a spidery hand on a sheet of notepaper he shared with Annie, who was with him in Pontecchio.

Villa Grifone, July 7, 1897

Dearest Guglielmo:

Yesterday evening I received your letter telling of the welcome and consideration shown you by Ministers and officials and that today you were going to show the King and Queen your experiments. A lot of newspapers have reported it and our *Carlino* has a good article from its Rome correspondent. As you can get this paper there I have not forwarded it to you, for who knows if you would have time to read it.

As you have heard, the Italian government would like your discovery developed under your name. It seems that on the contrary the English company plans not to use it. As I have written you the new company should bear your name.

I beg you to write immediately to the lawyer you have charged to negotiate the formation of this company telling him to suspend further action until your arrival. Then we shall have time to talk together and agree what is best to be done.

Do not pay attention when people try to hurry you, saying that supporters and investors will get tired of waiting; these are only artifices to make you accept what is in their interest, rather than yours.

I hear with pleasure that the Government is paying you 60 lire a day during your absence from England beside your journey and food expenses—and for your assistant, too.

It is a small compensation for the gift you have made of your patent to the Italian Government, an action that does you much honor as it shows how disinterested you are in benefits for yourself when it comes to serving your country.

While you are at Spezia, write us a line giving news of yourself and indicate if possible how long you will be there so that we may know when and how long you will be able to stop at Grifone, to be with us and to rest.

In the mean time accept my most cordial *saluti.*

I leave a little space for your Mama.

I am
yours affectionately
Ge Marconi
(Giuseppe Marconi)

And Annie adds in her English hand:

My dearest Guglielmo:

We were delighted to get your dear letter yesterday and to hear that your experiments are getting on so well, and that the King and Queen wish to see them and like you very much too, for everyone seems to like you. I hope you will keep well, dear, and that at Spezia your experiments at sea will be equally successful.

Your Papa is anxious about the Company and hopes no bad

next few years Annie Marconi lived in England with the utmost frugality and Guglielmo put Alfonso on a pitiful expense account so that they could both buy shares. He looked upon money as the unit of reward and had no intention of sharing the fate of early inventors who made none of it.

Whether or not he was as shrewd as he thought himself, he had created a *modus operandi* so that he needed neither to hang on government coattails nor to balance on the precarious wings of financial angels. Principally, he wanted to be able to increase his mastery of his immediate scientific problems, to learn the whys and hows of the action of electromagnetic waves over land and water. Of the company he said to the Society of Arts, with considerable feeling, "Such a commercial concern does not exist solely for the purpose of securing a pecuniary return to those who have braved risks and undertaken sacrifices in assisting and forwarding the necessary experimental work."

So began a conflict between Marconi the entrepreneur and Marconi the scientist. For the moment he saw no conflict, he liked both roles, since one served the other. To forward his experiments it was essential that the company make money.

The name that so concerned Giuseppe was at first "Wireless Telegraph and Signal Company," soon changed to "Marconi Wireless and Signal Company," and offices were established at 28 Mark Lane, in the City alongside Tower Hill.

From the moment it was formed, his activities in and out of the City became frighteningly complex. His first scientific task was to carry his signaling distances to still greater lengths. The objective which he realized that autumn, not without some incidental strife, was from Salisbury to Bath, 34 miles apart.

At this moment a contretemps arose with the post office, in itself insignificant except as it throws light on the changes that were taking place in Marconi's outlook.

He wrote to his good friend Preece on September 12, and reading between the lines it seems apparent that the post office was planning to run tests of wireless at Dover to which he had not been invited.

"As there seems to be some difficulty on the part of the P.O.

in the way of my going down to Dover I have determined to continue my experiments at Salisbury where I hope to go tomorrow.

"I have engaged an assistant, Mr. Bradfield . . . which seems a smart fellow.

"I am looking out for at least three mechanics or able workmen, and have so far engaged one.

"Major Don Dounop has allowed me to have the assistance of two R.E. sappers.

"Captain Baden Powell and Captain Kennedy will also come down to Salisbury. . . ."

I quote this because it shows Marconi's need for large numbers of competent people around him, his growing self-assurance, and something of that prickly independence which he inherited from his father. Later in the letter, in a paragraph which he earmarks "Private," his anger and hurt are revealed still more sharply. "If, as I fear, the department does not intend continuing in the friendly bona fide relations as you and I believed it would, I shall be obliged, immediately after settling experimentally certain little theoretical points at Salisbury, to proceed to Russia, Austria and other countries which are very anxious to have extensive experiments carried out at there [*sic*] expense." His feelings toward Preece "are always the same."

And so he goes off to Salisbury with his band which by train time includes the undetachable Mr. Kemp, leaving Preece to straighten out the muddle. This he did, calming Marconi and cajoling, or perhaps threatening his colleagues, so that within a week the ill feeling had died away and Marconi soon writes from Hill Crest Bungalow on Three Mile Hill:

> Dear Mr. Preece,
>
> I beg to inform you that since we arrived the weather has been so bad, and accompanied by such gales that we have found it, so far, impossible to try my experiment with balloons. [These were to supply the aerials.]
>
> Mr. Kemp and I have made two kites to use instead of the balloons, but though we have attempted to fly them during the day and night, yet we have not succeeded in making them fly owing to the wind which is too strong.

We are now making two stronger kites we hope will do and if they fail I will procure two long poles, with a peace [*sic*] of insulated metal at the top of them.

The weather has been so bad that I hope to have soon a fine day in which to try the balloon experiment. I would be glad if you would kindly wire me and let me know how long I may have the valuable assistance of Mr. Kemp and the two R.E.s. . . .

Preece wired back: *Kemp and Royal Engineers at your service as long as needful.*

George Stevens Kemp was "needful" for the next thirty-six years, which he passed as he began on the roof of the General Post Office, at the receiving end of Marconi's wireless installations.

CHAPTER EIGHT

Eighteen ninety-eight was a wonderful year for Marconi, a year of "firsts."

The Bath-Salisbury tests were front-page news and produced a flood of requests for "exhibitions," but they broke no new ground. The big work of '98 grew out of the Spezia experiments, however disappointing these had seemed at the time, and had to do with how weather conditions over water affect wireless. Hope for achieving ship-to-ship and ship-to-shore communication, dependable in fog and storm, which would save countless lives and cargoes, drove Preece and Marconi on.

From this time forward, Marconi spent his time on desolate coasts. They became his outdoor laboratories and, close to the sea, buffeted by tempests, he was in his element. It is in a setting of this kind that I first consciously remember him.

Off the coast of England, across the elbow of water called the Solent, lies the Isle of Wight. On its western promontory are the Needles, grotesque masses of chalk jutting up a hundred feet. Here, at the Needles Hotel on the beach of Alum Bay my father, fretting over the capriciousness and fragility of balloons, in November, 1897, had built a mast stout enough to withstand gales from the Channel and tall enough to carry a 120-foot wire. Then

he put to sea. He had rented a tug captained by a Royal Engineer named Kennedy and put a receiving set aboard which he connected to an antenna on a 60-foot mast.

The weather was gratifyingly bad. The men tossed for weeks off Bournemouth, Boscombe, Poole Bay, and Swanage, learning about the range of wireless at sea under the worst possible climatic conditions.

On land again, Marconi was met by his men and was able to report momentous results. First, weather did not hinder transmission. Second, he had signaled over the horizon—through a wall of water—as he had at Spezia but at a reassuringly greater distance, 18 miles.

There was one more result, a telltale of the future. For a short distance at least, the curvature of the earth had not hampered signaling across water.

Evidence justified the building of a second station on the mainland, at Madeira House, Bournemouth, which he transferred a little later to a barren beach 6 miles from the village of Poole. Here he was 18 miles from the Needles.

For twenty-eight years the Poole station was a field headquarters for Marconi. He was there so often that his mother moved down from London.

Shortly after the Salisbury-Bath tests, an engineer named H. M. Dowsett met Marconi at what he referred to as a "garden party" demonstration of wireless over a short distance in North London. He was subsequently hired and summoned to Poole by Colonel Jameson-Davis when Marconi had his own company and the post office ceased supplying assistants.

The train went no further than Bournemouth and had only gotten that far about twenty years before. From there to Poole the engineer had a long drive, much of it through dense pine wood that ended in a mile and a half of sandbank. I know that road well. Years later my brother Giulio and I used to bicycle along it and at least three times when I was eleven I walked the whole way to Bournemouth and back. For experiments across water the situation was ideal and, being off the beaten track, less liable to constant interruption than places like Dover were to prove.

At Poole, company members lived at the Haven Hotel which was run, according to Dowsett, by a Frenchman and his wife. In my day they were still there. Monsieur and Madame Poulain thoroughly enjoyed the fame that the presence of Monsieur Marconi brought to their hotel. They celebrated it daily by producing superb food, the star guest having a special penchant for the roast chicken.

The Poulains' establishment, described by Dowsett as "modern and comfortable, noted by tourists and yachtsmen for its cuisine and wines" was situated on top of a cliff. The words HAVEN HOTEL emblazoned over the seaside entrance could be seen a long way off. Only a low stone wall and, I recall uncomfortably, a thick hedge of exceedingly prickly evergreen shrubs separated the small hotel garden from the beach, where we had a bathhouse.

Haven was like a thousand other English watering resorts along the coast, with its railed pier running out to a pavilion where vacationers sat over the water. Only one thing distinguished it, Dowsett noted: "the Marconi three-mast set, 110 feet high, on the sandy foreshore with some of its stay anchors likely to be under water at spring tides."

The laboratory on the ground floor of the hotel, about eighteen feet square with two windows, had once been a sitting room. Except for a few chairs, a small table, and benches along the wall under the windows where instruments were arranged, there was no furniture. The few tools used for making the early apparatus were simple: a small metal-worker's plate, a homemade winder for the coils, and a paraffin-wax melting pot for brewing insulating varnish.

On the day he arrived, Dowsett found two mechanics making coherers and a third winding choke coils. The new man introduced himself to his boss, who smiled amiably but continued what he was doing. Dowsett hung around feeling silly while everyone went on working. Finally Marconi handed him a piece of metal no larger than a shilling and the oldest and smoothest of files, telling him to make some metal filings for a coherer.

For half an hour Dowsett filed away furiously, increasingly convinced that the whole thing was a leg-pull for the "new boy." He

accumulated a minuscule heap of dust, out of all proportion to the effort he had expended and was surprised when Marconi told him he had enough to fill a coherer. Only a fine, clogged-up file, it seemed, produced particles minute enough to serve this purpose.

The mood of that workroom and the remoteness of Poole were repeated through the years on other coasts and in other countries. Yet at Poole where one of the great advantages was the absence of distractions, my father occasionally created them. By the time we children knew the Haven Hotel he had a launch of his own. We would be ferried across the Solent in it and taken walking through the Isle of Wight, sometimes to Cowes for regattas, sometimes to wander through the little villages my father loved and past the cottage gardens. Frequently we lunched in the castles and manor houses where he was made much of and which, I think, reminded him of Grifone.

However, in 1898, he had little time for fun. Two problems he had to try to solve alone. All wireless messages were broadcast (a word that seems to have been first used in this connection by Fahie in 1898) with equal intensity and anyone with a receiver could eavesdrop. Worse, two senders could blot each other out.

Fahie, while saluting Marconi's progress with wireless over water, came to the gloomy conclusion:

"... turning from sea to land, we find a more circumscribed field of operation—at all events till means are devised for focussing the electric rays and rendering the apparatus syntonic. But even then, although by these means we will be able to record messages only where intended, there still remain cross interferences of which I fear we can never be rid, and therefore we can never use the system in a network of lines and flow, where wires cross, recross and overlap each other in all ways and directions. The waves of electricity, like waves of light and sound in similar circumstances, would so interfere with each other that the result would be chaos. Therefore wireless telegraphy can only be used in lines removed from each other's disturbing influences, as in sparsely populated countries and undeveloped regions."

Marconi was bringing the full power of his analytical mind

to bear on just this problem, though officially the company was concentrating on range testing only.

Kemp wrote in his diary that in May Lloyd's, the great English insurance corporation "complained of not being able to report steamers from Torr Head on the north-east corner of Ireland [it is characteristically tidy of Kemp to think of it as having corners] in spite of the steamers being able to report to the lighthouse on Rathlin Island." They asked if there was a possibility of signaling from the lighthouse to Ballycastle in County Antrim where there was a telegraph office, a distance of seven and a half miles.

At Ballycastle a 70-foot pole was erected and on August 25, George Kemp and an assistant named Glanville went to Rathlin. Near the lighthouse they put up a wire, first to 80, then 100 feet to clear the lighthouse. The assignment was accomplished and considered a marvel because there is a high cliff between Torr Head and Ballycastle.

The day after was dense with fog, but Kemp was able to report ten ships to Lloyd's via Ballycastle. Glanville, blinded by the swirling mists, made a misstep at the cliff top which sent him plunging to death on the rocks below. After his death, lighthouse keepers learned to tend the transmitter and the Marconi staff sorrowfully returned to England. Lloyd's undertook to install wireless in its marine signal stations along the entire coast and their keepers were trained to operate it. They continued to telegraph information directly to Lloyd's in London, where it was posted in "The Room" until the British government took control of all wireless stations in 1909.

In 1898, London saw demonstrations that had far-reaching effects. One, requested by Members of Parliament, between the House of Commons and St. Thomas's Hospital across the Thames in Lambeth Palace Road, was impressive in that the Marconi men set up their apparatus in less than an hour. Then the Speaker of the House sent a message and received a reply. Other exhibitions originated in the Mark Lane offices and one so interested John Brinton, a director of the Donald Currie steamship line,

that he asked if one of his ships, the *Carisbrooke Castle,* could be reported to him on her maiden voyage when she passed Bournemouth. The message was received without a hitch and telegraphed to Mr. Brinton, greatly pleasing him.

Lord Kelvin, the man believed to have preferred a boy on a pony to wireless, visited Alum Bay with Lady Kelvin and Alfred Lord Tennyson and was completely won over as a telegram sent on from Bournemouth attests: *To Maclean, Physical Laboratory, University, Glasgow. Tell Blyth this is transmitted commercially through ether from Alum Bay to Bournemouth and by postal telegraph thence to Glasgow—Kelvin.* Tennyson wired his nephew at Eton in much the same vein but ended, *Very sorry not to hear you speak your Thackeray tomorrow.*

Kelvin's messages began two things: paid wireless—he insisted on putting down a shilling, the price of a telegram in those days, for each wire he sent—and a close association with Marconi.

Another visitor was that good friend the Italian Ambassador, who traveled from London to dispatch a forty-word salute to King Umberto, in Italian. The fact that the message was received in intelligible shape was a feat in itself, since the operators spoke nothing but English.

With the thoroughness of good reporters, representatives of the *Electrical Review* and the London *Times* consigned messages in code to ensure that senders and receivers could not be in cahoots.

Fahie probably inspired the developments in July. He had written after the House of Commons incident that wireless was so easy to install and so inexpensive that it would be first-rate for reporting sporting events like races. The Dublin *Daily Express* requested the Marconi Company to undertake supplying a minute-by-minute account of the Kingstown regatta, Ireland's equivalent of Cowes week. Marconi was far too astute to pass up such an opportunity, though it served no great scientific purpose. It would assure immense publicity.

With his right-hand man, Kemp, and other helpers, he left for Dublin where they hired a tug, the *Flying Huntress.* While the *Daily Express* announced special editions and bulletins to be

posted on the windows of the editorial offices, Marconi rigged a 75-foot aerial on the mast. The harbor master gave permission for him to assemble a receiving station in his bailiwick and loaned a room in his house from which wireless reports could be relayed by telephone to the *Express* in Dublin, five miles to the north.

Marconi had a splendid time. He was devoted to sailing and here he was in the thick of it. Over more than ten miles of water he sent back news flashes on the position of the boats to Kemp who, as usual, received on shore and phoned them to the newspaper and to yacht clubs along the coast. Messages were brief but vivid.

10:55 The RAINBOW *having crossed the line before the gun was fired, was recalled, thereby losing 3¼ minutes.*

After the racers rounded the Rosbeg buoy, Marconi's seamanship is apparent in this nautical description: *The* ALISA *stayed, and went away on the port tack, as did also the* ASTRID. *After going a short distance the* BONA *also stayed, following the example of the other two, the* RAINBOW *and the* ISOLDE *standing in under Howth.* In the event it was the *Bona* which won the race and Marconi who won the lion's share of lineage.

That year everything dovetailed neatly and one excitement followed another. What happened in August was a little absurd but decidedly rewarding.

The Prince of Wales had gone to a ball at the Rothschild palace in Paris and fallen down the grand staircase, wrenching his knee on the way. For his own reasons, he preferred not to convalesce at Osborne House on the Isle of Wight where his mother was in residence worrying about her fifty-seven-year-old son. He stayed at sea in the royal yacht *Osborne,* putting, or so he must have hoped, an unbridgeable gulf between himself and his solicitous mama.

Queen Victoria was not to be done out of her solicitude. She had not read of the Irish regatta for nothing! She invited Marconi to set up wireless communication between Ladywood Cottage on the grounds of Osborne House and the *Osborne,* anchored one and three-quarter miles away in the Solent. To complicate the situa-

tion, the royal yacht lifted anchor from time to time and cruised.

As he told an assemblage of engineers, Marconi accepted the invitation "with true pleasure, for it offered me the opportunity to study and meditate upon new and interesting elements concerning the influence of hills on wireless communication."

The preparations were scrupulous, as always. To the mainmast of the *Osborne,* Marconi attached his vertical conductor, raising it to a height of 83 feet above the deck and using a coil capable of producing a 10-inch spark. With a mast 100 feet tall for his antenna, he erected his land station at Ladywood Cottage on the Osborne grounds.

The Queen was seventy-nine, the inventor twenty-four, and they were both obdurate people. The lady was addicted to her privacy and had issued orders that it be respected. The inventor, concentrating on his problems, strode through her gardens to inspect his shore installation, his mind absorbed in the problems which the East Cowes hills might present. He was stopped by a gardener who told him to "go back and around," as the Queen was "out walking in her bath chair."

Marconi did not care to be interrupted and had no desire to go back and around. He told the gardener that he would go through the garden or leave, then he returned to his hotel.

The gardener sent his message to the Queen. She looked up from under her heavy lids and commanded,

"Get another electrician."

The bearer of the message replied, "Alas, your Majesty, England has no Marconi."

The Queen sent a carriage to the hotel to fetch him and gave him an audience. Like his own Queen, she wished him success and congratulated him on his work about which the Prince of Wales had told her.

In the sixteen days that followed, a hundred and fifty messages crossed the hills and the water between the house and the ship, many of them as long as a hundred and fifty words transmitted at an average rate of fifteen words a minute. The Prince gave permission to Marconi to reveal the bulletins. On the fourth of August, Dr. Sir James Reid wirelessed to her Majesty:

H.R.H. the Prince of Wales has passed another excellent night, and is in very good spirits and health. The knee is most satisfactory.

And on the fifth:

H.R.H. the Prince of Wales has passed another excellent night, and the knee is in good condition.

So delighted was the royal family that they continued their communications during Cowes regatta week later in July. Various royal dukes and duchesses as well as cabinet ministers joined in. This was fun, a prelude to the age of radio hams. Far more moving was Marconi's desire that the men on lonely lightships and isolated lighthouses be able "also [to] send daily messages of a private character... to render less painful their isolation."

CHAPTER NINE

Trinity House, an ancient corporation of mariners founded in the reign of Henry VIII and to this day the authority for lighthouses in England and Wales, asked the Marconi Company to run tests between the lighthouse at South Foreland and one of the lightships that guard the perilous Goodwin Sands at the entrance to the Straits of Dover. Of three ships, the *Gull, Land,* and *East Goodwin,* Marconi chose the last because it was anchored farthest from the lighthouse—12 miles.

Marconi, with a solid organization behind him, saw that everything went like clockwork. On Christmas Eve, the essential equipment was loaded into an open boat which put-putted out to the ship. The men installed it with an assurance and speed gained from the cross-Thames experiment. By the end of the afternoon it was ready to operate. The installation on shore was far more powerful than was actually needed for communication with the ship. Marconi was looking ahead to spanning the Channel by wireless. Everything was in working order according to plan and everything worked as planned.

"A touch of a key," Dr. John Ambrose Fleming wrote, "on board the lightship suffices to ring an electric bell at South Foreland... with the same ease and certainty with which one can

summon the servant to one's room at a hotel. An attendant now sleeps hard by the instrument at South Foreland. If at any moment he is awakened by a bell rung from the lightship, he is able to ring up in turn the Ramsgate lifeboat. . . ."

On that headland the value of wireless was substantially proved. In a single admiralty court it was established that £52,588 worth of property and the lives of a crew of able-bodied seamen were saved by the ringing of that bell and a short wireless message. There were other shipwrecks averted, other lives saved that winter.

My father was, on the whole, inarticulate about his motives yet the bond between him and Preece was cemented by their mutual feeling for the dangers that faced sailors at sea and their sympathy for the loneliness that was, before wireless, so all encompassing. He who wooed solitude for himself was keenly aware how few men tolerate it gladly.

With the South Foreland mission accomplished, Marconi fixed his eye on his next target—France. His determination to reach it was so single-minded that, to Henry Jameson-Davis's despair, he turned down what the company felt was a most promising offer from America.

Cleveland Moffett, in Europe for the New York *Herald,* had been following Marconi's demonstrations with great enthusiasm. James Gordon Bennett, the paper's publisher, sent a reporter, Milton V. Snyder, to cover the Kingstown regatta. With both Moffett and Snyder backing Marconi's work, Bennett was moved to cable Snyder to ask Marconi to come to the United States where he could repeat his performance at the America's Cup Races, scheduled for the autumn of 1899. It would be good publicity and a chance to found an American company.

Marconi, by his own foresight, determined the policies of the Marconi Company and he was not to be shaken. Negotiations for cross-Channel tests had been in the making for months and he was in no mood to delay when they were settled. It had only to be decided where the continental terminal should be located.

Henry continued to press his case for going to America. Finally the cousins reached a compromise. If the French negotiations and

experiments were successfully concluded early in the year, Guglielmo could still go to America in September.

On March 2, 1899, he was making a speech to the Institute of Electrical Engineers when word was brought to him that the French government had concurred with his proposals. He finished the evening with the dramatic announcement that the attempt to send the first international wireless message would be made that month. Then he went into action.

Since the mast was, due to Marconi's astute planning, ready at South Foreland, this would be the English end of the experiment. On the French coast he chose the village of Wimereux, site of an abandoned Napoleonic fort, three miles from Boulogne where Annie Jameson and Giuseppe Marconi had been married thirty-five years before. Two assistants ran the necessary apparatus across from London to Wimereux in a launch on Monday, the twentieth of March.

A week later, French officials converged on the tiny town whose squat houses, strung out along the beach, were dwarfed by the towering mast the Marconi men had raised. The French were disconcerted to find that the very young man in overalls hooking up wires was the distinguished M. Marconi. *Quand-même,* they waited. Beginning at five o'clock in the afternoon, the London *Daily Graphic* reported, "a great number of messages in French and English crossed and recrossed between the little room at the South Foreland and the Chalet d'Artois at Wimereux, near Boulogne."

The first one came from Marconi in France, in a room with flowered wallpaper, a flowered rug and a deal table covered with a flowered cloth, on which was set the strange machine that emitted flashing sparks. Marconi was the operator and he ended it with the agreed upon sign-off, *VVV*. The next moment the receiver began to click and the tape to record the first eastbound message ever received across the 30-mile Channel by wireless: *V* [the call letter]. *M* [your message perfect]. Marconi responded boyishly and spelled out: *Same here. 2 CMS* [the length of the spark]. *VVV*. *V* meant Victory in the struggle for long-distance communication.

Later in the day there was a graceful tribute to the Frenchman who had helped make the day possible: *Marconi sends M. Branly his respectful compliments across the Channel this fine achievement being partly due to the remarkable researches of M. Branly.*

The *Daily Telegraph* had mentioned French and English. I am not sure how it would have classified the language used two days later by Cleveland Moffett who wrote for *McClure's Magazine* as well as the *Herald.* To Robert McClure, he wirelessed: *McClure, Dover: Gniteerg morf ecnarf ot dnalgne hguorht eht rehte —Moffett.* Kemp tapped it out solemnly and in a couple of minutes handed Moffett the reply: *Moffett, Boulogne: Your message received. It reads all right. Viva Marconi—McClure.*

The dignitaries departed for Paris, the stream of sightseers thinned, to the relief of the engineers, but one incursion at Wimereux was an alarmingly violent repetition of the previous case of the superstitious woman who held wireless responsible for her itching feet.

Marconi had been correct in his estimate, if a little shaky in his grammar, when he had summed up Bradfield as a man "which seemed a smart fellow." He was also an engaging young man whose photographs bear a startling resemblance to Edward VIII as Prince of Wales. One stormy night when he was in charge of the Wimereux wireless room, amidst all the printed flowers, a man burst in with a revolver that he was handling with supreme disregard for safety. The waves, he shouted, were causing him sharp internal pains.

Young Mr. Bradfield responded with splendid English composure. Without a sign of panic, he evinced the deepest sympathy and told the madman that he had heard of other people being similarly afflicted. However, he assured the Frenchman, he was fortunate in having come to the only man alive who could cure him. If, Bradfield went on gently, his visitor would be so amiable as to take an electrical inocculation, he would be immune to electromagnetic waves for the rest of his life. The sufferer was delighted and consented readily. First, Dr. Bradfield prescribed, he must divest himself of any coins he might have in his pockets and, of course, the large piece of metal that he held in his right

hand. Nothing could have sounded more reasonable, and the Frenchman relinquished his gun happily. Then Bradfield gave him a whopping electric shock. The fellow went away contented and evidently cured, since he never came back.

The Channel conquest was proclaimed historic—Fleming said it created a "great sensation"—and was written about at length. The French followed up on their sponsorship by asking Marconi for further tests.

This was a tempestuous year. All through the ensuing month of April he shuttled back and forth between the gunboat *Ibis* and the storeship *Vienne,* more often than not in raging gales, installing apparatus, signaling, receiving, and instructing French Navy personnel in how to operate wireless.

He shuttled back and forth across the Channel, too, that stormy spring. He was intent on the developments he was making and had far more visitors than he had time for. The premises at South Foreland, a little hut on the top of the chalk cliffs, were fitted out for lifesaving and for research, not for receptions. On the drenching day when the President of the British Board of Trade, the Secretary of the Post Office, and the Chinese Ambassador were shown around, he had nothing to offer them but cigars and beer—and umbrellas. For years distinguished visitors were associated in Marconi's mind with interruptions, flying bowler hats, and umbrellas turning inside out.

Marconi was never sidetracked for very long. In a letter to Preece written from the Haven Hotel on May 1, he said, "I have been intending to write you this long time but my recent demonstrations for the French Navy have procured me such a lot of work that I have had to put off doing so until now.... I am engaged in carrying out some interesting experiments on tuning and have been able to show the French Commission some decisive results. I hope soon to have an installation which will illustrate this departure." (On June 28, 1904, the British Patent Office would grant *William* Marconi Patent No. 763,772, for what was called his "four circuit" tuning invention.)

On June 17, an accident put a stop to the work in France. Marconi landed from the *Vienne* in the afternoon after sending mes-

sages from the moving ship to South Foreland. A chubby George Kemp, his thick, unmanageably curly red hair now matched by a gorgeous handlebar mustache, met him in a carriage. The two vastly different-looking men started their drive back from Boulogne to the Chalet d'Artois. The horse jogged off down the road while they talked of the day's showings. At a sharp and dangerous corner, the beast took fright and bolted, overturning the carriage. Kemp, on his side, managed to jump clear, Marconi was caught under the carriage and his kneecap fractured.

Back at the house, he was totally incapacitated for a week. Then he began to hobble about and to take the treatment prescribed by the local French doctor. Dowsett, who was there, recounted how an old wine barrel was set up and they filled it each morning with fresh sea water. One of the men, Cahen, helped Marconi get his leg into it for a thorough soaking each day, and half lifted him out afterward.

As soon as he was at all mobile, Marconi began making tests again "at any hour." For diversion there was a piano, out of tune in the damp and salty air, but Marconi, Bradfield, and Cahen were not deterred from playing "light music or the chorus song books of the day."

A French housekeeper came with the Chalet. Consequently Kemp found himself drinking French wine and not greatly liking it. "The best of the dinner wine," he said one night sadly, "remains in the sediment and dregs at the bottom of the bottle." It was the joke of the house for days afterward, and Dowsett remembered it for fifty years, though "why," he pondered in a letter to me, "is hard to say."

On the whole it was a carefree time as soon as Marconi's knee ceased being painful. There was only one set-back and that was unscientific and temporary. On a cold, rainy night Major Baden-Powell, who had gone with him to Salisbury the year before, turned up. Together he and Marconi dispatched messages to England and got nothing in return but blank silence. Marconi checked all connections, first in the laboratory, then out in the howling night. He was deeply disturbed and installed a new coherer. The Major, distressed for his friend in the troubled si-

lence of the wireless room and out in the icy rain, padded along after him, pulling wires and doing everything he could to help. They were at the foot of the mast, drenched and grim, when a shout came from the operator inside: "South Foreland!" The two men raced to the receiver as the Morse inker spelled out: *Just back from supper. Anything happened your end?*

CHAPTER TEN

On September 11, 1899, Marconi sailed on the Cunarder *Aurania* for America. With him were William Goodbody, a director of his company, and three technicians, the imperturbable W. W. Bradfield, Charles Rickard, and William Densham. She was the first liner to have suites and it seems likely that the Marconi men took advantage of this new luxury. The fact that his mother was not with him indicates a change in my father. Tired of the role of boy genius, he debarked on September 21 in New York, sans mother and wearing an immaculately tended mustache. It did not accomplish its purpose.

"When the passengers began filing down the gangplank of the *Aurania,*" the *Herald*'s ship news reporter wrote, "few of the many who were on the pier recognized in the youthful, almost boyish-looking man the bearer of a name that has become distinguished in electrical circles."

Another found him "a serious, somewhat self-centered young man who spoke little but then always to the point."

He was described as "no bigger than a Frenchman and not older than a quarter century. He is a mere boy, with a boy's happy temperament and enthusiasm, and a man's nervous view of his life work. His manner is a little nervous and his eyes

dreamy. He acts with the modesty of a man who merely shrugs his shoulders when accused of discovering a new continent. He looks the student all over and possesses the peculiar semi-abstracted air that characterizes men who devote their days to study and scientific experiment."

As the *Herald* had a vested interest in Marconi and competition between papers was cutthroat, not all reactions were kind. One interviewer commented sourly, "When you meet Marconi you're bound to notice that he's a 'for'ner.' The information is written all over him. His suit of clothes is English. In stature he is French. His boot heels are Spanish military. His hair and mustache are German. His mother is Irish. His father is Italian. And altogether, there's little doubt that Marconi is a thorough cosmopolitan."

Reporters sent to meet him on the dock were given what today reads suspiciously like a prepared statement. "We will be able to send the details of the yacht-racing to New York as accurately and as quickly almost as if you could telephone them. The distance is nothing, nor will the hills interfere."

The party then went to the famous old Hoffman House at 1111 Broadway on the corner of 23rd Street where, before they had even finished unpacking, there was a terrible rumpus. A boiler exploded in the basement of the hotel and a hysterical guest blamed it on the wireless apparatus that had just arrived. The Marconi men obligingly opened their luggage to show how ridiculous this assumption was and, to their horror, found that the trunk with the coherers was not there.

Marconi's "semi-abstracted" manner evaporated like steam and, like the boiler, he exploded. White with rage, he announced that he was taking the next ship back to London. His colleagues took time to calm him down. Finally he consented to do nothing precipitous while Goodbody and Bradfield took a cab and went as fast as the horse could gallop to the Customs House. The trunk was not there and they returned in deep dejection.

The resourceful Bradfield offered one last hope. He recalled that the *Aurania*, bound for New York, and another ship whose destination was Boston, had sailed from Liverpool on the same day. A *Herald* reporter, Robert Livingston, caught the next train

to Boston, found the missing trunk, and brought it to New York within twenty-four hours.

In the interim there was nothing to do but sightsee. Directly across Broadway, excavations were being dug for the Flatiron Building which would begin going up in 1901, a precursor of the skyscrapers that would make the skyline famous. Marconi reacted to it in his own way: he inquired whether the building's opacity to magnetic rays had been determined by its planners. It had not.

New York that week was in turmoil. On September 30 Admiral Dewey was to return on his flagship *Olympia* to receive a vast ovation for his victory over Spain at Manila Bay. Also in the offing was Sir Thomas Lipton whose sailing yacht *Shamrock* had been built on the Clyde specifically to take the America's Cup from the American yacht, *Columbia II.* Marconi was chiefly concerned with what was going on in New Jersey but he was not spared the general hoop-la.

At the Twin Lights beacons on the bluff of the Highlands, Bradfield got the receiving mast in position and patiently explained its purpose to the lighthouse keepers and the signal service men on the reservation. They listened silently, spat meditatively, and looked at him as if he had lost his mind. When Bradfield installed sending instruments on the Porto Rico Lines *Ponce* and the sea-going steamer *Grande Duchesse,* chartered to follow the races, the crews accepted his intrusion with the stolidity of seamen everywhere. The Marconi apparatus was ready but the regatta was not. It was postponed in order not to conflict with Dewey's triumphal arrival.

Sir Thomas Lipton, whose instinct for publicity antedated the profession of public relations by a good quarter century, saw that the day was Dewey's and since no one could compete for attention he decided to join in the other man's glory. His idea was to meet the *Olympia* with the steam yacht *Erin,* in which he had crossed the Atlantic. Marconi became involved when a bright *Herald* man, with a comparable eye for headlines, saw a way to give his paper a beat. He talked James Gordon Bennett, proprietor of the New York *Herald,* into hiring a stout tug, the *Luckenbach,* to meet the *Olympia* at sea and, with the inventor of wireless at

the transmitter, send back news of the Admiral's progress up the bay. Accordingly an eight-foot mast was rigged on the tug's after-deck and she was about to set out when Dewey wrecked everybody's plans by steaming into New York forty-eight hours before he was expected. Sir Thomas was the only one who succeeded in rescuing anything out of the rout. He drew the launch of his boat up under the *Olympia*'s bow while she was tying up and carried the hero back to the *Erin* for dinner.

In the middle of October, the parades over, the America's Cup races moved into the news. They had originated, though the name came later, in 1851 when a syndicate of American amateurs, all members of the New York Yacht Club, built a boat and raced the entire British fleet of racing yachts around the Isle of Wight. The *America,* a radically different craft from the others, brought home the Hundred Guineas Cup. Six years later this was presented to the New York Yacht Club as a perpetual challenge trophy for "friendly competition among foreign countries." The competition was far from friendly when Lord Dunraven's *Valkyrie III* lost the previous race in 1895 and yachtsmen were still touchy about it.

Lipton's popularity in the United States cleared the air. He was in the great rags-to-riches American tradition and the sale of Lipton's tea in the United States contributed materially to the riches. As a boy of fifteen, he had arrived on these shores alone and with eight dollars in his pocket. He worked up through an assortment of jobs and returned to his native Glasgow with a barrel of flour and a rocking chair for his old Irish mother, strapped to the roof of a hansom cab. This story alone was enough to make Americans love him and they welcomed him without reservation.

Lipton, with his self-taught grasp of the psychology of publicity, kept the details and specifications of his contender a secret. There was nothing like a mystery to rouse curiosity and interest to the boiling point. The suspense was compounded by the weather. Light winds turned the opening days into drifting races between virtually becalmed boats.

Marconi's first message served no nautical purpose and was sent only to silence possible scoffers. It proved that the course

off the spit of Sandy Hook was one minute by wireless from Herald Square.

On October 16, the races and transmitting began in earnest. At a rate of fifteen words a minute, still considered miraculously rapid, he sent twenty-five hundred words from the *Grande Duchesse* as she trailed the *Shamrock* and the *Columbia II* on their course 15 miles out from the Hook Lightship and 15 miles back. By the end of the second day, when the *Columbia* beat the *Shamrock* roundly, in a period of less than five hours more than four thousand words had been consigned to the air and received by telegraph at the *Herald* office, where they were reprinted in the paper and posted as bulletins in the windows.

Bennett was moved to editorialize: "The possibilities contained in the development of telegraphy without the use of wires are so important that any step tending to bring the system before the public and show what it is capable of accomplishing in a commercial way must be of interest not only to those interested in science but also to anyone who wants to send a telegram."

Marconi and Lipton became great friends. As a small girl I used happily to sit on "Uncle Tom's" bachelor knee and be called "Lady Lipton," a title many older women would have given their right hands to have in earnest. He had the charm of the Irish and showed such unshakable good sportsmanship in defeat that after his fifth beating at the hands of the Americans he received, as consolation prize, a gold loving cup from his devoted American victors.

For Sir Thomas in that October, there was failure and popularity; for Dewey, a house in Washington presented by a grateful country; for Marconi, a newspaper accolade—"Marconi is a national hero"—and more work.

The company had arranged for him to make tests for the United States Navy and the Army wanted him to demonstrate wireless between Fire Island and the Fire Island Lightship. The cruiser *New York* and the battleship *Massachusetts* were equipped for the tests and work began with them at anchor in the Hudson River. Then the cruiser moved out of harbor, receiving messages on her way to Sandy Hook and sending back to the *Massachusetts*.

The *Massachusetts* finally followed the *New York* and both vessels communicated with the station at the Highlands. A maximum distance of 36 miles was ultimately covered perfectly through wind, rain, and fog, but at ten-minute intervals messages were sent simultaneously from the land station and one of the ships that was anchored at the time to the other which was cruising. Signals came in but the tapes were unintelligible, proving only that double sending had taken place. This was a showing of immense importance to Marconi in the work he was doing on selective tuning. As he had not yet applied for patents, he could not yet afford to reveal what it was. The Navy's official report read: "During the tests the instruments were open to the naval board, except certain parts which were never dismantled, and these mechanics were explained in a general way. The exact dimensions of the parts were not divulged." The Navy was slightly aggrieved. "Mr. Marconi," the report noted further, "although he stated to the Board before these attempts were made that he could prevent interference, never explained how, nor made any attempt to demonstrate that it could be done."

Despite this, before the year was out the Bureau of Equipment recommended that Marconi apparatus be installed on several ships if it could be done at a reasonable cost. The Navy was not convinced, citing that "Communication might be interrupted altogether when tall buildings of iron intervene.... The shock from the sending coil of wire may be quite severe and even dangerous to a person with a weak heart.... The liability to accident from lightning has not been ascertained.... The sending apparatus and wire would injuriously affect the compass if placed near it.... We have no data as to the effects of rolling and pitching, but excessive vibrations at high speed apparently produced no bad effect on the instruments, and we believe the working of the system would be very little affected by the motion of the ship...." In other words the Navy was not prepared to go out on a limb for anything new and the Army, understandably, followed suit.

The state of mind about communications of the services is succinctly summed up in Secretary of the Navy John D. Long's report: "In April, 1901, the Chief of the Bureau of Equipment

appointed a board to consider the advisability of discontinuing the homing pigeons service and substitute for it some system of wireless."

In 1899, Marconi had done his best to put the pigeons out of business and had failed. He sailed for England with his technical men on the *St. Paul,* November 9, and that month the American Marconi Company was chartered in New Jersey, presumably by Goodbody, who did not return with them.

I know a great deal more about the eastbound voyage than the crossing in the *Aurania.* There were, *The Transatlantic Times* playfully commented, 375 passengers, "counting the distinguished and extinguished." Marconi had two boon companions on the trip: H. H. McClure, the early and influential wireless fan who had published Cleveland Moffett's article on the Wimereux adventure, and a Miss J. B. Holman, with whom Marconi fell in love.

Until recently when I found an item about their engagement in a 1901 copy of *The New York Times,* I did not even know her first name. It was Josephine and she came from Indianapolis. I am sure his Josephine was beautiful since my father's eye for feminine beauty was unerring.

The Marconi family connections were endless and international and my grandmother's sister (who had it from a cousin) wrote to Grifone that Miss Holman was rich. The grandiose name of her family home, Craigmor, suggests it. Annie Marconi, faced with losing her dearest child, must have found this fact some slight comfort. She herself had never known privation but she had a husband who was incessantly exasperated when she asked for money and she had had to turn to her own family to find financial backing for Guglielmo. She had every personal reason to understand how a woman's dowry could make marriage easier.

Still this was an upsetting time and his mother's letters to Guglielmo show admirable restraint. To lose him to anyone, rich or poor, on his first flight from home was hard. Though she was devoted to Alfonso and had a world of friends, Giuseppe was now seventy-six and moved complainingly from cure to cure. Her younger son's need of her when he was a strange and charming

child had consoled her when marriage grew difficult. His current needs, some real, some imagined, were respite from the frustrations of her daily life.

It is to her credit that Annie Marconi succeeded in making her tone toward Josephine Holman friendly and that she contrived to behave as self-effacingly as she did. On July 4, 1901, she wrote from Pontecchio:

> My dearest Guglielmo:
>
> I wrote you yesterday, but must send you a few lines today also to tell you I have just received a very kind and sweet letter from Miss Holman thanking me for my letter and saying they all hope very much I will come to America with you and that they may have the pleasure of seeing me at Craigmor. I wish I had got this letter before and I should not have said anything to you about her not writing. Now it is all right and I feel much happier and shall write to her soon.... I am intending to go to Porretta next week.... Alfonso remains here with his Papa so when you send him his shares address him here. He is now looking forward to hearing from you soon. Our friends here think it is only right I should be at your wedding.

She sent pictures of Villa Grifone to Miss Holman and the next time Guglielmo went to America she gave him best wishes for Miss Holman and Mr. McClure. When he wrote that the engagement was over she answered him from Bologna on April 13, 1902, that she was happy it was broken off by Miss Holman and that they had remained friends. One guesses her deep relief but never once did she show resistance to his marriage.

However, no shadow of the future clouded the seven romantic days on the *St. Paul*. Typically, Marconi created work for himself and others when he was not courting Miss Holman. It was described in full by the Managing Director of the Marconi Company, Major S. Flood Page, in a letter to the London *Times*.

> As Mr. Marconi left New York, he cabled to the office of the company in London that he would speak to the Needles from the *S.S. St. Paul* on their arrival in English waters. Having ascertained that the *St. Paul* was expected at Southampton on Wednesday, Mr. Jameson-Davis and I met at Yarmouth, Isle

of Wight, on Tuesday afternoon and arrived at the Needles about five P.M. We had an assistant with us and set about at once to speak to Haven. Even in those days the arrival of the Atlantic steamers could not be timed to an hour, but those whom we consulted seemed to agree that the *St. Paul* would pass us about ten to eleven o'clock on Wednesday morning. To make assurance doubly sure one of the assistants passed the night in the instrument room, but his night was not disturbed by the ringing of his bell, and we were all left to sleep in peace. Between six and seven A.M. I was down; everything was in order. The Needles resembled pillars of salt as one after the other they were lighted up by the brilliant sunrise. There was a thick haze over the sea, and it would have been impossible for the liner to pass the Needles without our catching sight of her. We chatted away pleasantly with Haven. Breakfast over, the sun was delicious as we paced the lawn, but at sea the haze increased to fog; no ordinary signals could have been read from any ship passing the place at which we were.

The idea of failure never entered our minds. So far as we were concerned, we were ready, and we felt complete confidence that the ship would be all right with Mr. Marconi himself on board. Yet, as may easily be imagined, we felt in a state of nervous tension. Waiting is ever tedious, but to wait for hours for the first liner that has ever approached these or any other shores with Marconi apparatus on board, and to wait from ten to eleven, when the steamer was expected, on to twelve, to one or two—it was not anxiety, it was certainly not doubt, not lack of confidence, but it was waiting.

We sent our signals over and over again, when, in the most natural and ordinary way, our bell rang. It was 4:45 P.M.

'Is that you, *St. Paul?*'

'Yes.'

'Where are you?'

'Sixty-six nautical miles away.'

There is a sequel to that epochal transatlantic crossing. When the *St. Paul* was less than 50 miles from the Needles, for an hour and a half dispatches reached the vessel about the progress of the South African War. The ship's captain, J. C. Jamison, felt that these should be preserved and a special edition of *The Trans-*

atlantic Times was run off for the benefit of the Seamen's Fund at a dollar a copy. "Through the courtesy of Mr. G. Marconi," it said, "the passengers on board the *St. Paul* are accorded a rare privilege, that of receiving news several hours before landing. . . . As we all know, this is the first time that such a venture as this has been undertaken. A Newspaper published at Sea with Wireless Telegraph messages received and printed on a ship going twenty knots. . . ."

The masthead lists Mr. W. W. Bradfield as Editor-in-Chief, Mr. T. Bowden as Assistant Editor, Miss J. B. Holman, Treasurer, and Mr. H. H. McClure, Managing Editor. Marconi cheerfully autographed the copies.

Before the *St. Paul* docked at Southampton, readers knew:

3.30 40 miles. Ladysmith, Kimberley, and Mafeking holding out well. No big battle. 15,000 men recently landed.

3.40 At Ladysmith no more killed. Bombardment at Kimberley effected the destruction of ONE TIN POT. It was auctioned for £200. It is felt that period of anxiety and strain is over, and that our turn has come.

PART II

CHAPTER ONE

London celebrated the passing of the nineteenth century and prophesied a golden future for the twentieth a little more than two weeks after Marconi returned.

He himself had a foot in both centuries. By tradition and breeding he was a man of the nineteenth century. It showed in the formality of his manners, the impeccability of his dress, and the reticence behind which he walled his personal self. Intellectually and temperamentally the twentieth was his century. Though Edison would claim kinship with him, he was as vital a builder of the air age as the Wright brothers. His genius shaped it and it was very much to his taste.

My father's career, combining research and business, seemed bizarre to nineteenth-century graybeards, given to categorizing inventors as dreamers incapable of earning material rewards. Such men were expected "quite properly" to starve for their ideals. But Marconi, as *Vanity Fair* of London put it, "never starved for more than five hours at a time."

His achievements included, if not a fortune, at least an impressive position in the world of affairs, and he took pride in his abilities as a practical man. There were differences of opinion at the time as to his acumen in handling the companies he formed, but no one disputed his supremacy as a scientist.

Father's attitude toward science was quite separate from his solid male ego when it came to business. He thought of himself, I believe, as a scientific vessel, a human instrument, chosen by a higher power to make a unique contribution to the progress of mankind. For his great discoveries he credited the Divine Will.

If his concepts soared and his mind was universal, he saw himself nonetheless, shrewdly, as a pounds-shillings-pence piece of property, and a valuable one.

At twenty-six Marconi started to turn into what his old friend Luigi Solari called a *salutista,* an Italian word that gracefully conveys the state of mind of a person concerned over his health. It has nothing whatever to do with hypochondria. A businessman does not subject his property to avoidable wear and tear. As a businessman, Marconi intended to keep his person at its top productive level.

The regimen which he accordingly instituted was zealously enforced by Kemp, who, said Dowsett, cared for his boss as if he were his son. It was sensible and it was basic: plenty of sleep and an adequate diet. The first part of the program could be attained by resisting social temptations. This was not so difficult when he was immersed in the solution of an intricate theoretical problem. The second was harder. He had never recovered from his childhood propensity to forget the food on his plate and his appetite, except when it came to M. Poulain's roast chicken, was always fugitive. As a young girl I recall suffering agonies of embarrassment when he took me out to restaurants and scolded the waiter for heaping his plate.

Now, however, wherever he was and no matter how late he had been up the night before, he sat down promptly at 8 A.M. to tea, two soft-boiled eggs, bread, butter, and marmalade. Father told me he hit on this menu because he felt confident that anywhere in the world there would be someone able and willing, at 8 A.M., to give him tea, two soft-boiled eggs, bread, butter, and marmalade. He smoked cigarettes occasionally, never cigars, and drank wine in small quantities less out of respect for his health than because he got little pleasure from it. Like many men of this century he was neither gourmet nor gourmand.

In the opening weeks of the new year Marconi was not well—his mother wrote anxiously from Ireland where she was visiting her family that he must be sure to wrap up warmly against the London dampness. "Everyone says it is very easy to get a bad cold after rheumatic fever," she clucked. Whether or not he actually had suffered as a child from rheumatic fever, as doctors suspected, her mother-hen solicitude was justified. He had been perhaps not delicate then, but neither was he robust. Marconi shared his mother's concern. His Italian blood was chilled by the fogs and rain of London, by the Channel winds and the Atlantic gales. He was often to be seen and frequently photographed wearing a fur-lined, fur-collared overcoat, buttoned to the chin, a brimmed tweed hat pulled down over his brow.

There were three tasks of major import which confronted Father as 1900 opened: to keep abreast of the paperwork of his expanding company; to prepare for tests preliminary to the next great leap across space—spanning the Atlantic; and to bring his latest work to the point where he could patent it.

He now wrote to the United States to explain the seeming failure of simultaneous transmission between two of its vessels. The Secretary of the Navy reported as a consequence: "Mr. Marconi, in a letter to the Naval Board, stated that he was unable to give a demonstration of the devices for preventing interference, and of the means used for tuning and syntonizing the instruments, the reason being that they were not completely patented and protected." (First specifications were not filed with the patent office until April of 1900.) Businessman Marconi was paving the way for future contracts between the American company and the United States Navy. Subsequently they fell through because the terms were considered exorbitant. The late Admiral Hooper, U.S.N., told me the Marconi Company asked ten cents a word on every message sent between ships on maneuvers. The British and Italian Navies were content with the rates and both installed the Marconi system in the next few years.

The parent company, with a staff of seventeen, found itself inundated with international business (as Marconi had hinted in his letter to Preece from Poole) from the day the first *V*

flashed from Wimereux to South Foreland. In April, the Marconi International Marine Communication Company was incorporated with fourteen directors, three, including Marconi, from the parent company. The prospectus, issued in June, pointed out: "It will be seen that the Company is 'international' inasmuch as the directors represent British, German, French, Belgian, Italian, and Spanish interests, and they hope to establish marine wireless telegraphy on a sound commercial basis practically throughout the world." New offices were taken at 18 Finch Lane, which angles a narrow way between Threadneedle Street and Cornhill, a minute's walk from the Bank of England. The Mark Lane offices were closed shortly thereafter. Though business was developing well, the young company had its financial problems. In 1897 Marconi had opened an account with the Westminster Bank for the Wireless Telegraph and Signal Company. On March 28, 1900, he opened another at a branch bank for what was then called the Wireless Telegraph Company which made the heroic gesture of financing his wages, experimental and development expenses. This was considered such folly that it was said in the City that "the old gentleman at the Lombard Street office was getting weak in the head, as he was financing another gentleman who had persuaded him that he could hear noises in his head."

It sounds slightly grandiose to talk about the "parent company" and "International Marine," both fledglings that came into being to forward the dream of twenty-six-year-old Marconi. I am impressed, however, by the seriousness of the enterprise and the formality of business manners in those days. A photograph of my father giving an award in 1909 shows some of his directors standing ponderously beside an ample mahogany table on which rest two silver and crystal inkwells. Major Flood Page's lean, inquiring face is suitably decked with a thick mustache and a pointed beard; Henry S. Saunders's white hair covers half of his bright English complexion, beard and sideburns and mustache mingling like a prophet's; Colonel Sir Charles Euan-Smith, the chairman, is a Santa Claus; even Henry Jameson-Davis has that daunting dignity which is the product of a brave show of whiskers. Only Marconi is clean-shaven—the mustache was abandoned as

a failure by then—thin, serious, but dressed like the rest in a morning coat with tails and striped trousers. It is not easy to reconcile him with the man at Wimereux in overalls, boots, and cap, rigging wires, the man battling head winds at South Foreland, the man bundled up and wearing a cap with earflaps who lived beside the tempestuous sea.

They may look pompous, but they were men of imagination and hardihood. The first company developed twelve sending stations without government contracts or agreements of any kind. It was an enormous gamble. Until 1904 all such installations were free (there was no licensing) to communicate as they liked with ships beyond the three-mile limit and with any place beyond the United Kingdom. The Marconi system was also being made available to other countries—they were keenly interested.

Germany moved first. Her North German Lloyd *Kaiser Wilhelm der Grosse,* built expressly to capture the Blue Riband of the North Atlantic from the Cunarder *Lucania*—later to carry wireless herself—was equipped by Marconi International, as were the lightship and lighthouse at Borkum on Germany's southernmost coast. That was early in the year. In November, the Belgians followed suit by having their Royal Mail Steam Packet, *Princesse Clementine,* which ran between Dover and Ostend, fitted with wireless and a station set up at La Panne near Ostend. Ship after ship had an addition to her superstructure, a small house like the texas on a Mississippi River steamboat, built as on the *Princesse Clementine,* between the tall vertical funnels. Inside, machinery was lined up along a wooden shelf, spare parts heaped on the floor beneath, and a clock fastened to the wall.

Like a juggler with three balls in the air, my father had to keep an eye on his three consuming interests—company business, what he called the "big thing," transmitting across the Atlantic, and the new invention—all at the same time. Before he could think of sending messages from America to England, sites had to be chosen and stations designed and erected on both shores. For England the choice fell easily on Cornwall where it reaches a long granitic finger toward the West.

In July of 1900 Major Flood Page and R. N. Vyvyan had gone

with my father by train to Cornwall and decided on Poldhu (pronounced Pol-ju) near the small town of Mullion at the south-west tip of England. To John Ambrose Fleming of the University of London, recently appointed scientific adviser to the Marconi Company, went the job of designing the installation. Vyvyan, the red-tape breaker who was also a crack engineer, was in charge of construction, which began in October.

These men were truly pioneers. The station had to be a hundred times more powerful than anything that had preceded it and the rig was entirely experimental. By January of 1901 the Poldhu building was ready for Fleming to come down from London to take part in the initial tests. The oscillation transformers were not efficient and this set-back cost the engineers four months. In August, 1901, 200-foot masts in a ring 200 feet in diameter could be seen towering eerily over low stone walls, a chunky stone house with half-timbered gables, and the chicken-coop wireless shacks that crouched by the sea.

By September, 1901, the whole airy structure, looking ephemeral as a cobweb, was ready for the conical aerial it had been built to support. On the seventeenth, nearly a year after it was begun, a cyclone struck the coast and the whole magical edifice was wrenched apart, the masts strewn like jackstraws on the ground.

Marconi demonstrated once again the quality he had first shown at Pontecchio. Though despair swept the ranks, he did not lose courage. The engineers said it would take another three months to clear and rebuild. This was unthinkable. He believed he could devise a simpler aerial (he had never fully approved the first one) which would be equally effective. The replacement involved only two 150-foot poles, with a triangular stay between them from which fifty-five copper wires were suspended to form an enormous fan. It was ready in two months.

During the trying weeks of building and rebuilding, Marconi was forever arriving and leaving. There was no train connection between Poole and Poldhu so he shuttled through London, attending to company business between trains and leaving his mother, herself much on the move, to struggle with the domestic details of his life.

From the Haven Hotel she writes:

> After you left this morning I found you had not taken your rug with you.... I sent it to you at 3 o'clock today and hope you will get it all right by tomorrow.... I hope you have plenty of blankets on your bed, if not make them put them on.... I have put all your things as tidy as possible in your room, and the key to your wardrobe I have put in one of the little drawers of your looking glass on the dressing table, but indeed there is little use in locking the wardrobe for all the keys are the same.

From Ireland she coaches him in what he is to do:

> I suppose you are at Haven Hotel. I addressed my registered letter with the bill there, and hope you got it safely and that you have written down the sum and date in your cheque book.... You will be sorry to hear that your Aunt Lizzie [Prescott] has been ill with fever, but is now nearly well....

From the Grand Hotel near Trafalgar Square before leaving for Bologna she renders her accounts:

> I got postal orders for two pounds to send Margaret Davis for poor R., one pound from you and one pound from me—besides I sent him by parcel post some of your old Clothes: one jacket, 2 prs. of trousers, 2 waistcoats, a lot of old cravats and some collars which you don't wear 14 and a half. I could not pay the parcel post for they would not tell me what it would be until tomorrow. I paid the bill, forty pounds, thirteen shillings and fourpence. I added it up and it was all right. I will send you the bill from Bologna, D.V.

From Bologna she oversees his wardrobe:

> I am thinking if it has got warmer at the Haven Hotel you will want your lighter flannels. Mrs. Woodward has the keys of your boxes. Your flannels are in the box with the two trays. Summer sleeping suits on the first tray. Summer vests under the two trays. Summer suit, jacket, waistcoat and trousers in the wardrobe (side of window).

An Italian violinist dedicated a march to Father and came to her in Bologna saying he had to pawn his violin. She gave him money and wrote to Guglielmo suggesting he send five pounds. And, had he remembered to acknowledge the dedication? Very rarely she asked him to do an errand for her. On one occasion it was to buy a certain travel book on Egypt with the "very best binding" for a friend of hers. She thanked him for sending a photograph to Canon Meligan, the husband of her cousin. The Canon appreciated it, she wrote, and had hung it in his drawing room.

Only once was she cross. A member of the Marconi staff neglected to meet her in London with the keys. She waited all day for him and had to forego buying a hat. She was as devoted to pretty hats as she had been when he was a schoolboy in Florence a dozen years before.

She never nagged or insisted, save for the repeated plea to write oftener to "poor Alfonso," whose health was wretched, probably because he had to live in the shadow of grandfather's irritable temper. Guglielmo was still the center of her world even though she knew in her heart he belonged to no one but himself.

She was well aware that he was absorbed but it was not invariably business that absorbed him. My father's deep love of beauty went with him to the lonely shores he frequented. At Poldhu headquarters there was a large, gray stone hotel like a primitive castle, filled with the sound of the sea. With the curious whimsicality which characterizes the English climate, the air was often mild. Dour escarpments were embroidered with sea pinks and the windswept heather was bright with the yellow blossoms of gorse.

Marconi loved this Cornish countryside and rode through it on his bicycle, stopping to talk to children along the road, and coming back to the inn to tea just in time to watch the changing sunsets. One of the children, Dorothy March, has written me:

> When I was a child, we spent six months at Cadgewith, Cornwall, with an artist Uncle. Poldhu is near and I remember the great wireless mast which was pointed out to me as having been recently erected by an Italian engineer-scientist. . . .
>
> When the cricket teams met, the Mullion eleven was a man short so Marconi was asked to play in his place. My father kept

the score and each man came up to give his name. Your father said "Marconi" and my father asked "Will you please spell it for me?" Needless to say my father never forgot that, as not long after .... your father's name leapt into fame....

I remember the cricket luncheon in a huge barn ... the jolly meal with laughter and speeches and a great spirit of friendliness. Marconi must have been popular otherwise he would not have been asked to join the Cricket Eleven as Cornish men are usually extremely reserved. They still speak of "going to England."

Miss March cuts through some of the mystery about the young man who was to be my father. He joins the team to play a game which he did not know as a lad, is popular with the extremely reserved men of Cornwall, happy in the big barn in the country air, hearing the country voices. She paints a picture of someone young and simple and friendly.

Any hour that he could find at Poole, Marconi used to work on the invention which would make it possible to send messages privately and simultaneously under all conditions. On April 26, 1900, he had filed provisional specifications for a patent on an invention the object of which "is not only to increase the efficiency of the apparatus hitherto employed, but also to be able to control the action so as to cause intelligible communications to be established with one or more stations out of a group of several receiving stations"—selective tuning.

The importance of the patent he was granted in 1901, the famous 7777 (known as the four sevens), was stated with force and simplicity many years later by Judge Wiley Blount Rutledge of the United States Supreme Court:

Schoolboys and mechanics now could perform what Marconi did in 1900. But before then wizards had tried and failed. The search was at the pinnacle of electrical knowledge. There, seeking, among others, were Tesla, Lodge and Stone, old hands and great ones. With them was Marconi, still young as the company went, obsessed with youth's zest for the hunt.

At such an altitude, to work at all with success is to qualify for genius, if that is important and a short step forward gives

evidence of inventive power. For at that height a merely slight advance comes through insight only a first rate mind can produce. This is so whether it comes by years of hard work tracking down the sought secret or by intuition flashed from subconsciousness made fertile by long experience or shorter intensive concentration. At this level and in this company Marconi worked and won. He won by the tests of results. No one disputes this.

CHAPTER TWO

Obsessed, as Judge Rutledge put it so many years later, with youth's zeal for the hunt, Marconi's quarry during the last months of 1900 was the Atlantic. He believed that electric waves could span it and, what almost no other contemporary scientist believed, that the waves would curve to follow the curvature of the earth. Before he could prove his point, there were vast amounts of work to be done, at Poole, at Poldhu where his transatlantic station was going up, and at London where the company business which would finance him must be attended to.

From Poole to London, London to Poldhu, Poldhu to London to Poole—it was a dizzying circuit, the pattern broken only after the turn of the year.

In January, 1901, my father took a map of America and on it marked the area where the receiving station for "the big thing" would be built. It was to rise on Cape Cod, the "bare and extended arm of Massachusetts," where "a man may stand and put all America behind him." Chatham is its elbow, Truro the wrist, and up the forearm one long, high cliff of sand and clay rises 130 feet from the sea. No land intervenes between that cliff and Poldhu.

It was ideal for his purposes. However, he had still to pinpoint

a particular place. This he realized was best not done long-distance. Marconi and Kemp and Vyvyan sailed for New York. It was dead of winter—February—when they arrived in Provincetown.

I went years later to resurrect that practically forgotten period of my father's life, scrambled over the dunes, stopped in the spruce, small towns and talked to the few men and women left who remembered something about it. When I went to the Cape it was July, the days golden and balmy as I walked the broad white beach on the Atlantic side, trying to imagine how it must have looked to Father from the cliff-top when the gray, ominous winter Atlantic roared in and engulfed the shingle.

At Provincetown Father's already long association with men on ships and men on wharves canceled out his "foreignness" (to Cape Codders even Connecticut visitors are suspect as a little foreign and Father's accent was no help). The very first day he made the acquaintance of a salty native named Ed Cook.

Ed Cook was a landsman who knew the "oceanside" the way he knew the palm of his calloused hand. By trade he was a wrecker, profiting from disaster, a member of the brotherhood that enthralled Thoreau when he saw one of them picking kelp off the hull of a ship so recently flung up by a storm that his neighbors were still rescuing the crew. These wreckers were not consciously cruel. They were simply specialists.

Ed Cook matter-of-factly salvaged the wreckage he found. Sometimes, when a boat was in trouble, he towed it around to the shelter of the bay and bargained with the captain for his reward. The sea was his living but the Cape was his love. To buy some part of its land he robbed the sea. According to his granddaughter, who talked of him slowly and with the deep understanding only one Cape Codder has of another, "He reckoned there was nothing finer than to stand on one hill and point to the next and say, 'That's mine.' "

Again Father had, with uncanny accuracy, found his man. Ed Cook, knew "his" dunes up and down the Cape, as surely as he knew "his" ocean, and he was Yankee through and through. When he found there was work for him on excellent terms, he

harnessed up his horse and went at it without delay or unnecessary comment.

Cook's job was to find a site for the power station and living quarters, obtain victuals for the workers and building materials which would have to come from Boston. In military terms, he was quartermaster of the operation.

Together the two men set out in Ed's wagon, prospecting, Ed in oilskins, Father dressed strangely by local standards in a fur-lined overcoat, his ears hidden under the warm flaps of a cap. Winter winds, so strong they were said occasionally to blow a man into the air or a piece of cliff into the bay, buffeted them. The horse heaved and the wheels jounced the springless wagon along sandy, rutted roads, past trees dwarfed and twisted by gales and exotic groundcovers germinated from seed that had lain in the ballast of ships.

Father's first choice was Barnstable. Mr. Carl Taylor, the man who from the Marconi Company's earliest days was entrusted with constructing stations all over the world, told me how this happened. Barnstable was ideal from the transportation angle —heavy supplies would be needed for the station. However, Barnstable is more accessible to the continent behind it than to the ocean in front, since the land mass of the elbow of Cape Cod shelters it from the open sea. Whether that stretch would also block wireless waves, presuming that they did (as Marconi believed they would) follow the curve of the earth across the Atlantic, was too big an unknown to gamble on. Father dismissed the idea of Barnstable.

His second choice was the Highland Light, standing on what was described as "a lump of clay provided by Providence to erect a lighthouse on." By its nature that lump fulfilled his requirements, with its 45-degree angle bank rising 125 feet above low-water level. Here the ocean stretched without obstruction all the way to Cornwall.

It seemed, too, that this spot was predestined, justified by the high annual toll of wrecks in these waters, many preventable by wireless. By ship forty-one miles stretch between the Cape Cod light and the light guarding Boston Harbor, almost until the

twentieth century the busiest port in the United States. It was a difficult passage for sailing ships which made first landfall at the Highland Light. The keeper of the light, as he stood his lonely watch, consulted a small volume listing the names of 3,000 ships of American registry which he might expect to see. In addition he had, in the huge volume of the Universal *Code of Signals,* a compilation of another 20,000 vessels of all nations and an extensive code of signals, semaphore for daylight and Morse for flashing messages after dark. Once he had determined the name of a ship, he looked it up and sent word to owners in the United States by telegraph or in Europe by cable that their ship had "got by." This archaic system, so inadequate to save men and tonnage, was all the safeguard there was when Marconi arrived to discuss building a wireless station.

The men of Highland Light would have none of it or of him. They thought he was probably a charlatan and they *knew* he was a foreigner. Not even Ed Cook was able to override their thorny New England resistance to strangers and new-fangled contraptions.

Ed's third try was almost assured of approval by the local citizenry since he picked one of his own hills (at least he claimed it was his and no one disputed him at the time) near South Wellfleet. The great advantage here was that the village sits at the narrowest point of the Cape and building materials could come in ships to the dock on the bay side, be loaded on wagons, and trucked along short-cut back roads to the sea, little more than a mile away. For the twenty 200-foot masts that would go up to more or less duplicate the Poldhu installation, 100-foot lengths of yellow or white pine were to be lashed together. Timber must be shipped in. Large trees could not be found in the neighborhood—the region had long ago been deforested to build ships, its land left barren except for warped and stunted plants. Steeples of churches, around which low, weathered shingle houses of fishing villages clustered, alone reached upward toward the sky.

De la Vergne oil burners for the powerful generators could be imported either by boat or train. Marconi ordered food, too. The

South Wellfleet hotel, Holcomb House, was capable of feeding the Marconi contingent but the meals must have been deplorable. Marconi gained an unmerited reputation for being finicky because he had what were described as "fine foods and wines" sent from Boston.

Soon after the site was settled on, my father packed up and sailed back to England, where there was so much that only he could do. Vyvyan stayed on to see the building of the station through, not without misgivings as he had little faith that the structure could withstand heavy weather. His uneasiness deepened as the equinoctial gales set in and he cabled London for permission to lower the height of the masts.

In October, before the answer came and only weeks after the Poldhu masts collapsed, a storm struck and wiped out the station. One of the massive pine shafts punched through the roof of the transmitting hut, one crashed within three feet of where Vyvyan was standing. People of the Cape still speak of the terrible clamor and the sense of disaster that filled the night.

This second catastrophe, an anticlimax after the Poldhu failure, was received with comparative stoicism in England, where Marconi was buoyed up by the success of experiments that began early in November between Poldhu and his most distant station at Crookhaven on the west coast of Ireland, 225 miles away. The signals came in strong and clear. He was confident they could carry ten times the distance.

Time was his only enemy. While repairs were going ahead at Cape Cod, Father decided to transfer to Newfoundland and take a flyer on a kite. He told only the few people who would be working with him most closely.

Poole, where, more nearly than anywhere else, he had headquarters during that year, is closely linked to Newfoundland. The Dorset fishermen were as familiar with its waters as with their own Solent. For generations the boys of Poole had gone out to the Grand Banks and had brought back not only fish and game and cranberries for their tables but also mementos. I like to speculate that the Pool of Pool Bay in the New World is a corrup-

tion of Poole in the old. The fishermen that Father knew liked to talk to him about this English world beyond the sea and he read intensively about it.

When Marconi met the Governor of Newfoundland, then an English colony (it was only later that it became a province of Canada), he said he had been shocked by the bulletins published by the Newfoundland Marine and Fisheries Department because they showed the parts of the coast where eighty vessels had come to grief, more than 600 lives lost and millions of dollars worth of property wiped out. My father was compassionate, as well as practical.

D. W. Prowse's *History of Newfoundland* must have helped prepare him for his venture. I own Father's copy with *G. Marconi* written in a flamboyant hand on the flyleaf. Prowse's note of presentation is pasted in below it. There are endless reproductions of old drawings and decorative maps. Since a Genoese, John Cabot, originally Giovanni Caboto, "found the isle," lively correspondence from Italian archives is included. The pages have been much thumbed and some, perhaps to be taken in his pocket on the voyage, are cut out of the back.

One book, in my father's hands, took on a special meaning, though its ultimate import was not yet clear to him in 1901. In 1896, Isabella Judson published a biography of her father, Cyrus W. Field, pioneer of intercontinental cable, whom the men of Poole remembered well. Thirty years earlier, Field had brought the western end of his Atlantic cable to Heart's Content, one of the more merciful bays on the merciless continental shelf, not far from St. John's. After a series of costly failures, Field's original, badly managed company, which had to be rescued with refinancing as often as his cable had to be rescued from the ocean floor, was superseded by "The Anglo-American Telegraph Company. It was formed by ten gentlemen who met around a table in London and put down ten thousand pounds apiece." Bolstered with further funds from the maintenance company and sale of shares to private investors, Field succeeded in laying the first workable cable in 1866.

The cost should have concerned my father. Analogies between

Field's Anglo-American and Marconi's Wireless Telegraph Company are all too apparent today. Both were backed by men who, understandably enough, invested not only to be repaid but also to have their money make money. Instead both companies called on them for additional sums. Marconi's Wireless Telegraph Company had expanded rapidly and there were no dividends in sight for such outlays as the Poldhu station. Now, at last, Field's company was reaping a rich harvest from its financial information (the company made a "great point in transmitting quick-time messages, or stocks as they are termed"). Anglo-American's enormous international capital and earnings, if wireless were successful, would be mortally threatened.

There is no hint that Marconi was thinking apprehensively or in any other way about Field and Anglo-American as he set out for Newfoundland.

"On November 26, 1901," Father recorded, "I sailed from Liverpool in the liner *Sardinian* accompanied by two assistants, Messrs. Kemp and Paget. As it was clearly impossible at that time of year, owing to the inclement weather and especially in view of the shortness of time at our disposal to erect high poles to support the aerial, I had arranged to have the necessary aerial supported in the air by a small captive balloon, and so we took with us two balloons as well as six kites."

The luggage that came out of the *Sardinian*'s hold on December 6 at St. John's, Newfoundland, included wooden crates and a hamper big enough to have concealed Falstaff, but weighing less than if it had. In it were the "toys" on which a mighty future would hang.

There was no crowd of reporters at the gangplank, as there had been in New York on his previous trip, though Newfoundland's newspapers all originate in St. John's. Only the faithful New York *Herald* sent a man from the United States, possibly the same dogged reporter who had covered the America's Cup races. Undoubtedly he thought Marconi was going to try for increased distance in communicating with ships at sea. The arrival seemed quiet and routine.

Marconi continues his story: "We landed at St. John's on Fri-

day, December 6, and the following day I visited the Governor, Sir Cavendish Boyle, the premier, Sir Robert Bond, and other members of the ministry." It must have been then that he talked about the ghastly record of losses at sea for they "promised me their heartiest cooperation and placed the resources of every department of the Government at my disposal in order to facilitate my work. They also offered me the temporary use of such lands as I might require for the erection of depots at Cape Race, or elsewhere, if I should eventually determine to erect the wireless stations which they understood were being contemplated."

With considerable cunning, my father proceeded to disguise the true purpose of his arrival. On Saturday he cabled Liverpool requesting Cunard and other lines carrying wireless equipment, to give him positions of their outbound ships so that he might begin distance tests with them. The stories the *Herald* reporter filed over the next days show that he had no suspicion of the truth. They have a gossip-column, breakfast-table breeziness which is refreshing and funny.

As they sailed into St. John's, the three scientific voyagers at the rail had been struck by the tower to John Cabot which stands high above the harbor.

"After taking a look at various sites which might prove suitable, I considered that the best one was to be found on Signal Hill, a lofty eminence overlooking the port and forming the natural bulwark which protects it from the fury of the Atlantic gales. On top of the hill there is a small plateau of some two acres in area which I thought very suitable for the manipulation of either the balloons or the kites. On the crag of this plateau rose the new Cabot Memorial Tower which was designed as a signal station, and close to it there was an old military barracks which was then used as a hospital."

Beside this two-story stone building is a walled courtyard nakedly exposed to the weather, where the *Herald* man found them. As a result of his visit he sent a story his paper published the next day, Tuesday, December 10. Marconi and his assistants, he said matter-of-factly, were busy unpacking instruments and

removing the balloons and several cylinders of hydrogen gas to one of the old buildings near the tower. A local firm was about to prepare the ground by covering it with zinc.

When Marconi picked up the story, the tone was very different. "It was in a room in this building that I set up my apparatus and made preparations for the great experiment." Two hundred and twenty-five miles had been bridged by wireless between Poldhu and Crookhaven. Now it was 2,170 that he proposed to put to the test.

"On Monday, December nine, barely three days after my arrival, I began work on Signal Hill, together with my assistants." He had not lost the old habit of sharing credit, working as lead man of a team. "I had decided to try one of the balloons first as a means of elevating the aerial and by Wednesday we had inflated it and it made its first ascent in the morning. Its diameter was about fourteen feet and it contained 1,000 cubic feet of hydrogen gas, quite sufficient to hold up the aerial which consisted of a wire weighing about ten pounds."

As the *Herald* described it: "Mr. Marconi was at Signal Hill all day testing the balloons.... He hopes to have everything completed by Thursday or Friday, when he will try and communicate with the Cunard steamer *Lucania,* which left Liverpool on Saturday." The disguise was working perfectly.

"The experiments are exciting keen interest here," he went on. "St. John's merchants are considering the advisability of having the system installed on the sealing steamers.

"It is reported that the Canadian Government is awaiting results of Mr. Marconi's experiments here preparatory to having the system installed along the entrance to the Gulf of St. Lawrence."

Tuesday was difficult. The captive balloon was launched but escaped. Wednesday's account in the *Herald* described what happened: "Mr. Marconi lost a balloon today while experimenting for the proposed wireless signals here. 'Although foggy, the weather did not look unfavorable for our work,' Mr. Marconi said, 'and we continued experiments. One of the balloons measur-

ing fourteen feet in diameter was sent up. The wind freshened quickly increasing to a gale, and when the balloon had gone up about one hundred feet we decided to take it down. Unfortunately the rope broke and it disappeared out at sea."

" 'Today's accident will delay us for a few days and it will not be possible to communicate with a Cunarder this week. I hope, however, to do so next week, possibly with the steamer leaving New York on Saturday,' " the *Herald* quoted him as saying.

Father's and Paget's account, given later over BBC, makes it clear that this was not the whole story: "... the weather," Paget recalled, "was terrible and for a couple of days we battled with the elements, one of the balloons having been carried away by the gale, which snapped the heavy mooring rope like a piece of cotton. So Mr. Marconi suggested that for his crucial test on the third day we should use kites, and on that morning we managed to fly a kite up to four hundred feet.

"It flew over the stormy Atlantic, surged up and down in the gale tugging at its six hundred foot aerial wire. The icy rain lashed my face as I watched it anxiously. The wind howled around the building where in a small dark room furnished with a table, one chair and some packing cases, Mr. Kemp sat at the receiving set while Mr. Marconi drank a cup of cocoa before taking his turn at listening for the signals which were being transmitted from Poldhu, at least we hoped so."

Father takes up the story: "It was shortly after midday on December 12, 1901, that I placed a single earphone to my ear and started listening. The receiver on the table before me was very crude—a few coils and condensers and a coherer, no valves, no amplifier, not even a crystal.

"I was at last on the point of putting the correctness of all my beliefs to the test. The experiment had involved risking at least 50,000 pounds to achieve a result which had been declared impossible by some of the principal mathematicians of the time. The chief question was whether wireless waves could be stopped by the curvature of the earth. All along I had been convinced that this was not so, but some eminent men held that the roundness of the earth would prevent communication over such a great dis-

tance as across the Atlantic. The first and final answer to that question came at 12:30."

He set down exactly what happened then.

"Suddenly, about half past twelve there sounded the sharp click of the 'tapper' as it struck the coherer, showing me that something was coming and I listened intently.

"Unmistakably, the three sharp clicks corresponding to three dots sounded in my ear; but I would not be satisfied without corroboration.

" 'Can you hear anything, Mr. Kemp?' I said, handing the telephone to my assistant. Kemp heard the same thing as I. P. W. Paget, a little deaf, was unable to hear it, and I knew then that I had been absolutely right in my calculations. The electric waves which were being sent out from Poldhu had traveled the Atlantic, serenely ignoring the curvature of the earth which so many doubters considered would be a fatal obstacle, and they were now affecting my receiver in Newfoundland. I knew that the day on which I should be able to send full messages without wires or cables across the Atlantic was not far-distant."

In this triumphant hour, his vision of the future did not include the frantic battles that would ensue with the cable company.

"The distance had been overcome and further development of the sending and receiving apparatus was all that was required.

"After a short while the signals stopped, evidently owing to changes in the capacity of the aerial which in turn were due to the varying height of the kite. But again at 1:10 and 1:20 the three sharp little clicks were distinctly and unmistakably heard, about twenty-five times altogether.

"On Saturday a further attempt was made to obtain a repetition of the signals but owing to difficulties with the kite we had to give up the attempt. However, there was no further doubt possible that the experiment had succeeded and that afternoon, December 14, I sent a cablegram to Major Flood Page, managing director of the Marconi Company, informing him that the signals had been received but that the weather made continuous tests extremely difficult. The same night I also gave the news to the press at St. John's whence it was telegraphed to all parts of

the world." That very day he also cabled the news to Pontecchio.

The New York Times began its December 15 story on this extraordinary piece of news: "St. John's, N.F. Dec. 14.—Guglielmo Marconi announced tonight the most wonderful scientific development of modern times."

And what of the *Herald?* Its reporter's interest seems to have flagged on the crucial Thursday and Friday, for his Saturday story opened: "The weather on Signal Hill was extremely cold and unfavorable for wireless telegraphy experiments. The kite used yesterday fell into the water near the cliff, but was afterward rescued by a passing tug-boat and returned."

He had missed the scoop.

Now the world knew and congratulations poured in. Small girls, in chilly little clumps, climbed Signal Hill with bouquets of flowers for Father. The Governor gave a lunch with long speeches on the historic role of Newfoundland as the link between Europe and America. Everyone was interviewed. Professor Michael Pupin, American scientist and inventor, acknowledged handsomely that "Marconi has proved conclusively that the curvature of the earth is no obstacle to the system of wireless telegraphy." In New York, Mr. Cuthbert Hall of the Marconi Company received reporters and prophesied that there was no foreseeable limit to the number of messages that could be exchanged by wireless and tactlessly compared the costs of wireless installations to the costs of laying cable (there were by now fourteen on the Atlantic bed, enough to girdle the earth seven times).

This brought an immediate dissent from the president of the Commercial Cable Company. "Signor Marconi," he said, "had mistaken the action of the ground current or lightning for signals."

But the lay public was delighted. They still saw Marconi as a boy and even more delightful, as a boy with a kite. Ray Stannard Baker, writing for *McClure's,* caught this reaction: "A cable, marvelous as it is, maintains a tangible and material connection between speaker and hearer: one can grasp its meaning. But here is nothing but space, a pole with a pendant wire on one side of a broad and curving ocean, an uncertain kite struggling in the air on the other—and thought passing between. And the apparatus

for sending and receiving these transoceanic messages costs not a thousandth part of the expense of a cable....

"The portrait published with this article, taken at St. John's a few days after the experiments, gives a very good idea of the inventor's face, though it cannot convey the peculiar lustre of his eyes when he is interested or excited—and perhaps it makes him look older than he really is. One of the first and strongest impressions that the man conveys is that of intense activity and mental absorption. He talks little, is straightforward and unassuming, submitting good-naturedly—although with evident unwillingness—to be lionized."

In the eyes of the world what Marconi had done with two balloons and six kites was magic, an occult modern mystery. The Field achievement was by comparison pedestrian and cumbersome. He himself had written when he was taken aboard the *Great Eastern* to see the ship's crew through their heavy labors, toward the end of the cable-laying voyage, that there had been on board "ten bullocks, one milk cow, 114 sheep, 20 pigs, 29 geese, 14 turkeys, 500 fowls as live stock and dead stock in larger numbers, including 28 bullocks and eighteen thousand eggs." Nor was this all. When they dragged the ocean floor to bring up the "slimy monster," they had to use as grapnel twenty miles of rope twisted with wires of steel in order to bear the strain imposed by thirty tons of cable. It took two hours even to lower it to the bottom. As against this, Marconi had instantaneously caught his intangible train of waves with a kite that could be packed in a wicker hamper and weighed a few ounces.

Long, long afterward, the Italian government asked my father to record, in his own voice, the thing he accomplished in Newfoundland. I listened to the record in the Library of Congress in Washington, D.C. It had been years since he had heard the three dots come over the stormy sea from Poldhu but the excitement is there, fresh and real, beneath the controlled, musical voice.

On that December 15, Marconi reported to the *Herald:* "The success of these tests will alter my plans. I intend to suspend further tests with kites and balloons for a short time and erect a large station here at a cost of fifty thousand dollars having

towers or masts for supporting wires. This, of course, provided there is no governmental objection. This will necessitate my going back to England at the end of next week in order to have the necessary equipment sent here, with suitable transmitting machinery and other requirements."

There could, his tone implied, be no question of government objection. Marconi had reckoned without Anglo-American.

CHAPTER THREE

Before going back to England Marconi took a short trip to Cape Spear to see whether it was suitable for a permanent wireless station. He returned to St. John's on December 16 to find an officer of the law waiting to hand him a threatening communication from Anglo-American's lawyers: "Unless we receive an intimation from you during the day that you will not proceed further with the work you are engaged in and remove the appliances erected for the purpose of telegraphic communication, legal proceedings will be instituted to restrain you from further prosecution of your work and for any damages which our client may sustain or have sustained; and we further give you notice that our clients will hold you responsible for any loss or damage by reason of your trespass upon their rights."

If Commercial Cable dismissed Marconi's conquest of the Atlantic as a "fairy tale of science," this document made it clear that Anglo-American did not. It contended that it held a monopoly, as the legislature had granted exclusive landing and working rights for fifty years in 1884, on telegraphy in Newfoundland, and it meant to protect its contracts, though they had only two more years to run.

Marconi laughed when he read the paper but the cable com-

pany had already "sustained damage" serious enough to explain its apprehensions, if not the crudity of the attack. Said a London newspaper: "The fall in the securities of cable companies which commenced with the announcement of the success of Marconi's experiments in having signals transmitted across the ocean by his wireless system of telegraphy has been continuous throughout the week."

The row was on and the men of Newfoundland backed Marconi. American and English papers at once reported "widespread and growing indignation" at St. John's. Sir Cavendish Boyle, responding to the general Canadian feeling that Anglo-American was behaving unsportingly, made a point of going on the seventeenth with his full cabinet up to the old barracks to pay an official visit to Marconi's station. The announcement they made was pompous—they had decided "to countenance him because of the great scientific interest concerned"—but their action was warm. Governor Boyle cabled King Edward VII about Father's success, gave an imposing luncheon in his honor, and obviously approved a resolution passed on December 20: "The Council are much gratified at Signor Marconi's success, marking as it does, the dawn of a new era in transoceanic telegraphy, and deplore the action of the Anglo-American Company."

Lower down the line, the fishermen were as angry as the government. They liked Marconi because he was unpretentious and direct. They understood him and his youth appealed to them. Moreover, he was concerned over the difficulties and dangers of their lives, whereas the cable company, they felt resentfully, made it all too clear where its interests lay.

On occasion Marconi loved a good fight but, coming as it did at the end of a long period of strain, he had no stomach for this one. He decided to leave and Ray Stannard Baker later wrote: "I accompanied Mr. Marconi across the island on his way to Nova Scotia, and it seemed as if every farmer in the country had heard of him, for when the train stopped they came crowding to look in at the window. From the comments I heard, they wondered most at the inventor's youthful appearance." He was twenty-seven.

As soon as it was known that Marconi was quitting St. John's, offers flooded in from other communities eager to cooperate with him in building a permanent station. Alexander Graham Bell wrote that his property at Cape Breton was at Marconi's disposition.

Alec Johnston, representative of Cape Breton in the federal parliament at Ottawa and publisher of the Sydney, Nova Scotia, *Record* was actively concerned in the outcome and wrote me thirty years later: "I resolved to make a dash to North Sydney where Marconi would change from the steamer *Bruce* to the train for New York for the 'story.'

"I was pacing up and down the pier when the steamer arrived. The passengers commenced to disembark with little delay. The train which was to carry them to their respective destinations would shortly arrive and consequently there was no time to lose.

"I had no difficulty in picking out my man from the rest of the passengers. While his luggage was being assembled I approached him, introduced myself and in a very few words explained to him the purpose I had in mind. This purpose was not merely to obtain a newspaper story but to point out, if he would listen to me, that in my opinion the experiments in which he was engaged could be carried out from points along the Cape Breton coast as well as from Newfoundland and insofar as distance was concerned the difference seemed of little consequence.

"At this stage I gathered that Signor Marconi was registering interest. But he raised the point that the same difficulties that confronted him in Newfoundland might similarly operate against him in Cape Breton.

"It was easy to set his mind at rest on that score. There were no communication companies that could or would set up any claim of monopoly."

The train for New York pulled out without Marconi.

Whether by good fortune or good management, G. H. Murray, head of the Nova Scotia government, was in town for the day and joined Johnston in persuading Marconi to stay over long enough to reconnoiter the shore between Sydney and Louisburg. He was delighted to accede and under distinguished auspices started out

grandly in a special car furnished by the Dominion Oil Company which owned not only the railroad but also the steamship line and a great deal of land round about.

Marconi sat next to the window with Cornelius Shields, general manager of the coal company beside him, maps and charts spread across their knees.

The train puffed along slowly, following the shoreline so they caught constant glimpses of the ocean. Between Bridgeport and Glace Bay, a flat headland ringed with cliffs, jutted out. Marconi was instantly taken with it, saying excitedly that "it looked like a fine location." Shields seized the bell cord and the engineer obligingly stopped the train.

The men walked across to the tableland and climbed up on to it where the view of the Atlantic was sweeping. Marconi's enthusiasm continued to grow. His companions were immensely excited; they wanted the honor and the glory which Anglo-American had denied Newfoundland for Nova Scotia. To clinch it Shields volunteered on the spot that his company would give this piece of land to my father as its contribution toward the enterprise. It was an auspicious beginning. There was more to come.

That night the party dined at the Sydney Hotel in a mood of celebration which spread, Johnston recalled, "even to the staid Marconi." Financing, the Nova Scotians believed, could be arranged with the national government at Ottawa but if not they were prepared to get it in Nova Scotia.

The next day they carried Marconi and Kemp and Paget off to Ottawa where Finance Minister Fielding, a man noted for his care in dispensing public monies, sent them along to Prime Minister Sir Wilfrid Laurier. All Canada had followed the accounts of Marconi's work and Sir Wilfrid was one of his ardent admirers. It would take $75,000, a far larger sum then than it is now, but Marconi got it and in record time. By the following night, a contract for the building of the Table Head Station was drafted and the Canadian government pledged enough money to cover the new station and meet the cost of such construction as remained to be done at Cape Cod.

Marconi left for New York in the morning, undoubtedly breaking his trip to see how things were going at South Wellfleet. People there still remember that he used to drop in unexpectedly to check progress. On these visits he stayed in a strange little cottage shaped like a tower which had been moved down to the installation from the village of Wellfleet. Cape Codders may be set in their ways, but they move their houses the way most people move their cars. Father's cottage has been moved back three times as the sea ate into the coastline. It is now a tourist cabin. I have walked through it and climbed to the room where he slept. From every window, moor, sky, and ocean stretch away endlessly.

In New York, scene of earlier triumphs and wild adulation, Marconi met with a kind of hostility less tolerable than the bludgeoning of Anglo-American. Many of his colleagues, the men of science who should have understood and rejoiced in his progress, were not convinced. He had violated a preconception and they did not like it. If, as they believed reasonable, electromagnetic waves traveled in a straight line, they would have been over 1,000 miles above the earth by the time they reached St. John's from Poldhu. Only two men had heard, or claimed they had heard, the three dots. They might have been mistaken. They might have been deceived by disturbances in the air. There was no suggestion of fraud but the inference that his announcement was premature and rash cut Marconi cruelly.

A fellow scientist, Oliver Lodge, expressed this attitude in a letter to the London *Times:*

> Sir,—It is rash to express an opinion either way as to the probability of the correctness of Mr. Marconi's evidently genuine impression that he obtained evidence on the other side of the Atlantic of electrical disturbances purposely made on this side, but I sincerely trust that he is not deceived. . . .
>
> Proof is, of course, still absent, but by making the announcement in an incautious and enthusiastic manner, Marconi has awakened sympathy and a hope that his energy and enterprise may not have been deceived by unwanted electrical dryness of that wintry shore.

Major Flood Page replied in haste in a hand he feared could not be deciphered because he was in "a very shaky railway carriage on his way to the continent," reminding Lodge that Marconi was not there to answer letters like his and implying that doubts at this time were not sportsmanlike. He ended furiously, "It seems to me incumbent that some reply should be made, which is my apology for addressing you."

The *Daily Telegraph* of December 18 rubbed salt in Marconi's wounds: "Despite the detailed, signed statement by Signor Marconi... there was an indisposition... to accept as conclusive his evidence that the problems of wireless telegraphy across the Atlantic had been solved by the young inventor. Skepticism prevailed in the city. 'One swallow does not make a summer,' said one, 'and a series of "S" signals do not make the Morse code.' The view generally held was that electric strays and not rays were responsible for actuating the delicate recording instruments. ... Some attributed these wandering currents to the old trouble —earth currents, others to the presence of a Cunarder fitted with Marconi apparatus which was, or should have been, within two hundred miles of the receiving station at St. John's on the day of the experiment."

It was not that they did not like Marconi. An outsider wrote that "everybody" loved him and admired his courage. They simply did not believe that Marconi could have sent messages across the Atlantic.

The New York Times was then and always pro-Marconi:

> The initial success of Marconi appeals powerfully to the imagination. It will be the fervent hope of all intelligent men that wireless telegraphy will very soon prove to be not a mere "scientific toy," but a system for daily and common use. The men of science point out obstacles. They have commonly been deemed insuperable. The first triumph is an augury of future conquests.

This was comforting but when the old friend and supporter, Preece, was numbered among the waverers, it distressed young Marconi. Sir William was quoted as saying the three dots used

for *S* and the dot-dash-dot that indicates *R* are the sounds most frequently caused by natural atmospheric disturbances. It was suggested that Father might unwittingly have heard from a Cunarder signaling with his apparatus. A French naval officer, though any Frenchman ought to have been convinced by the work Marconi did in France and on ships for the French Navy, maintained that the wireless coverage of the *Columbia-Shamrock* race was a hoax—that the stories released in New York bore no resemblance to the ones sent from the *Grande Duchesse.*

Edison's first reaction to the news that wireless had crossed the ocean was that it was impossible. He gallantly corrected this immediately, saying that his faith in Marconi's integrity was sufficient ground for accepting the claim. Michael I. Pupin, Professor of Electrical Mechanics at Columbia, fully believed that Marconi had succeeded and said, "According to the newspaper reports I have read, the signals were very faint but that has little to do with it. The distance . . . was overcome, and further development of the sending instruments is all that is required. . . . Marconi has proved conclusively that the curvature of the earth is no obstacle to wireless telegraphy . . . it is only to be regretted that there are so many so-called scientists and electricians who are trying to deprive him and his people of the credit and benefits of the work to which they are fully entitled."

Mixed though reactions were, there were scientists who wished to honor Marconi. They decided, with certain businessmen, to give him a dazzling banquet. It was arranged under the auspices of the American Institute of Electrical Engineers whose president was Charles Steinmetz. T. Comerford Martin, editor of the *Electric World* and a stout champion of Marconi publicized it vigorously. As plans proceeded, the committee in charge of arrangements found to their horror that many reputable scientific men would not risk attending.

At this juncture Martin appealed to Elihu Thomson, one of the great American electrical pioneers—his work with wireless actually anteceded Hertz's—who, almost alone among the experts, believed that electrical waves follow the curve of the earth. He wrote Martin a strong letter stating his absolute faith in Mar-

coni. With this letter as a bellwether, Martin rounded up many of the timid.

In spite of initial difficulties, the banquet in the Astor Gallery of the old Waldorf Astoria on the night of January 13 turned into an ovation. The outpouring of admiration and of genuine affection which the preparations for the party bore witness to moved Marconi to tremendous happiness. He was like a child, a solemn child, his eyes shining but with no words to express the quickening of his emotions. Attached to the wall back of the table of honor a large black tablet bore the letters M-A-R-C-O-N-I appropriately spelled out in electric lights. On the wall at the head table's right another tablet bore the name *Poldhu,* and opposite was *St. John's,* both wreathed in smilax and linked by a silken cord. On this symbolic cable, lights winked out the three dots of the *S* in Morse code.

There were about three hundred guests and countless people jammed the balconies. The menu bore a likeness of Marconi at the historic hour when he received the first transatlantic signal and the dinner wound up with ices, each bearing an icicle telegraph pole. Whoops of glee and cries of "Frozen out!" greeted them while Marconi, in an access of pleasure, stood up and clapped his hands.

Martin, as toastmaster, rose and read a sheaf of letters. Nikola Tesla wrote that Marconi, "a deep thinker . . . may prove one of those whose powers reach out for the good of the race and the honor of his country." Said Edison, "I am sorry not to be present to pay my respects to Marconi. I would like to meet that young man who has had the monumental audacity to attempt and succeed in jumping an electrical wave across the Atlantic."

He had talked with Edison, the toastmaster added, within the past ten days and that great man had said ". . . he thought that sometime there might be signals across the Atlantic without wires but he did not know when and, being preoccupied, he did not think he would have time to do it himself. 'I'm glad he did it,' he said. 'That fellow's work puts him in my class. It's a good thing we caught him young.' "

From behind the rose-banked table with its winking lights,

young Guglielmo Marconi rose, his heart lighter than it had been since the afternoon of December 12. He made his speech quietly and seriously, thanking the American Institute of Electrical Engineers and feeling "greatly honored to be in the midst of so many eminent men, whose names are household words in the whole civilized world." Steinmetz, Bell, Thomson were at his table. If he had felt rancor over their doubts it was dissipated now in the joy of the hour and he had nothing but gratitude and abiding affection for Elihu Thomson.

He outlined what had happened, thanked Canada for its hospitality and help and spoke of what 7777 would accomplish. "By experiments and improvements which have been made, messages can be read only when the receiver and transmitter are attuned." Of the cable battle he said only, "The cost of laying cables is so large that the cable companies have to charge a high price for the service. My system will cheapen the cost very greatly."

And with his customary generosity he shared his laurels. "I have built very largely on the work of others and before concluding I would like to mention Clerk Maxwell, Lord Kelvin, Professor Henry, and Professor Hertz. I do not know if you are aware that the message received at St. John's was heard through a telephone receiver and in connection with the telephone the name of Professor Alexander Graham Bell is inseparable." He finished: "I drink a toast to the health of the American Institute of Electrical Engineers!" and raised his glass high, then lowered it to his lips. The assembled throng raised their glasses to him and drank in profound silence. Then they cheered.

Two days later his old and good friend, *The New York Times,* said on its editorial page:

> His statement was so modest, so free from every trace of exaggeration for business purposes, so generously just in its recognition of the obligation to the pioneers in experimentation along the lines he has followed, so frank in acknowledging the claims of the living as well as the dead, and withal so conservative in its predicting of what may follow the work he has now in hand, that everyone present realized that to Marconi was not only due the honor of his discoveries in the field of mechanics, but

the still higher honor which belongs to one who can subordinate all professional jealousies and rivalries to the truth. From the wreath woven for his own brow he borrowed enough to make wreaths for his predecessors and colleagues in the study of electrical waves . . . and by what he took from it his own was rather enriched than impoverished.

CHAPTER FOUR

My father, Guglielmo Marconi, the young man who bore himself with such decorum and modesty at the Waldorf, had already made his great and original contributions to science. I can see, from the perspective of history, that he had actually completed the framework on which, for the rest of his life, he built. It was an unmarked pinnacle then. In his own eyes, it seemed that there was much more to do than had been done. Indeed in the years ahead there would be new patents of great importance, tests, experiments, tragedies, and triumphs. As long as whatever he accomplished was imperfect he would drive himself to improve it and as long as men doubted his work, he would continue to prove it to them.

A scientist like Professor Ambrose Fleming, by nature exceedingly cautious, admitted that Marconi had achieved an awesome thing. "When it is realized," he wrote in a letter to the London *Times,* "that these visible dots and dashes are the result of trains of intermingled electric waves rushing with the speed of light across the intervening . . . miles, caught on one and the same short aerial wire and disentangled and sorted out automatically by the two machines into intelligible messages in different languages, the wonder of it all cannot but strike the mind." My father him-

self never lost the sense of that wonder. It tended to make him humble rather than proud, and increasingly remote.

Ten days after the testimonial dinner Marconi sailed for England on one of his innumerable ocean crossings. For once he did no actual experimenting. He was tired to exhaustion and there was a colossal amount of mail to sort and answer—letters from admirers and invitations to lecture and write articles (he was prepared to do little of either). Knowing how his mind worked, however, I am certain that his days at sea were given over to assessing the Newfoundland discoveries and predicating his future moves on them. At any rate the fruit of the voyage was a highly technical patent so explicitly clear to him that he filed an application and built a pilot model within the next few months.

In London he was in no mood for the reporters who invariably appeared at railroad stations when he traveled, so he parried their questions and proceeded to disappear, as far as the press was concerned. Director Marconi left instructions at Finch Lane that his address be kept secret. Then he took a hansom cab to the quietly anonymous part of the city where his mother was living and walked in unannounced. For one month thereafter she feasted on the pleasure of having her son to herself, of being necessary to him, of protecting him and providing the peace he so deeply needed.

No one was permitted to invade this privacy except Luigi Solari. He was always welcome. And I bless him for taking notes of the discussions of those private days.

Luigi, a far more ebullient man than Guglielmo, asked what was the greatest emotion his friend had felt over the transatlantic affair.

"I am never emotional," Guglielmo answered with a passion that belied his words.

Then, as was his way, he weighed his statement and candidly amended it. To his mother's delight he admitted, "I did feel strongly when I saw my mother again. She's the only person on earth who understood my misgivings and trepidation when I left for Newfoundland." And furthermore she believed in him, blindly,

unscientifically, maternally even when he did not quite believe in himself.

Mostly they talked about the technical problems that confronted him and of his practical plans. His mother knew, sitting in the lamplight listening, that her son would leave her soon. Always, departures followed fast on arrivals. She had steeled herself to his marriage some day but she could not find it in her heart to make a whole and separate life for herself—she never did. Annie Marconi held herself ready for the less and less frequent arrivals of her son till the day she died. That evening in the quiet parlor she heard him say that he must go back to America as soon as possible, and whatever was in her heart, her face showed nothing.

Guglielmo went on. After he had cleared the rough agreement proposed by the Canadians with his company, he would get the Nova Scotia station under way and check the progress of the Cape Cod installation. Did the rotation of the earth affect the passage round it of electrical waves? He thought not. He would test his conviction by sending west-to-east messages from the ship he took to America.

Three almost supraphysical unknowns troubled him. The first was the effect of solar light; the second, the effect of electrical disturbances; and the third, the effect of mountainous terrain on electrical waves over long distances. For the last, he wanted to communicate over the land that lies between Europe's seas and, he told his mother and Solari, the British Admiralty had offered to put a cruiser at his disposal. Though grateful for this offer, he would have preferred an Italian warship.

But why not? Solari broke in. Guglielmo was persona grata with the Italian authorities and with the House of Savoy. The new King, Victor Emmanuel III, was as ardently interested in Marconi's work as his father, Umberto I, had been. Nothing could be simpler to arrange. Marconi took fire at the idea, hesitating only because, "in Italy there is really extraordinary skepticism about wireless communication." Thereafter, that night, they talked on and on about Italy. By blood he was only half Italian,

by love more nearly all Italian. For the present, though, the homesick man could not go home. The Mediterranean would have to wait on the Atlantic.

A month to the day after he landed in England on the American Line's *Philadelphia,* Marconi sailed from Cherbourg on the same ship. With him was a considerable entourage: Mr. and Mrs. R. N. Vyvyan, for that gentleman, as he wrote dryly, had "taken the opportunity of a brief holiday to get married," another engineer, J. D. Taylor, two wireless operators, F. C. Stacey, who had served on the *Princesse Clementine,* and C. S. Franklin, as well as Henry S. Saunders of the company, and Marconi's secretary. The purpose of the crossing, as far as they were concerned, was to blazon the truth of what wireless could do to a doubting world. It was, Vyvyan felt, "a memorable voyage."

The Marconi troupe was at work before the *Philadelphia* cleared harbor. They fixed an aerial to the 170-foot mast and ran a wire into the cabin they had set aside as a workshop and demonstration center. Since the length of this wire was fixed, unlike the one to the kite at St. John's, they were able to employ a tuned, or syntonic, receiver and to record signals on tape with a Morse "inker" that printed blue dots and dashes. Both these procedures had been ruled out by the dancing ups and downs of the Newfoundland kite.

As the ship quit France and passed south of the British Isles, Marconi and his engineers, who had embarked at Cherbourg for this purpose, kept in touch with the Needles for the first 70 miles, the limit of the station's sending range. After that they tuned in Poldhu.

Guglielmo Marconi was still smarting from Oliver Lodge's contention that his announcement from St. John's had been given in "an incautious and enthusiastic manner." Enthusiastic he most certainly was. Incautious never. For the shipboard demonstration he provided himself with unimpeachable and technically knowledgeable witnesses: the captain, A. R. Mills, and the chief officer, C. Marsden. Passengers of various nationalities were also invited to look on. Before he docked in New York, Marconi had

a series of tapes, signed as bona fide by the captain. These he planned to present to the reporters.

The record tells the story of what had happened:

Messages received on board steamship PHILADELPHIA *from Marconi station at Poldhu (Cornwall) as follows: No. 1—250.2 miles; No. 2—464.5 miles; No. 3—1032.3 miles; No. 4—1163.5 miles; No. 5—1551.5 miles. Signals 2099 miles from Poldhu when we were in Latitude 42.01 N., and longitude 47.23*

Reporters were on hand when the *Philadelphia*'s gangplank went down in New York (within a year Father would be described as "the most interviewed man in the world"). The boyishness, so evident and irresistible on his first arrival in the United States, was replaced by a certain defensiveness.

"This merely confirms," he said a trifle grimly as he handed the newsmen his tapes, "what I have previously done in Newfoundland. There is no longer any question about the ability of wireless telegraphy to transmit messages across the Atlantic."

For an instant, however, his reserve was penetrated. They asked him about the future, and like all men of vision he delighted to make a prophecy. Given adequate apparatus, he told them, he thought it possible to send wireless around the world. This they printed without comment. In 1901 how could they believe him? It would be nearly twenty-five years before electrical waves circled the earth. Could even Marconi have foreseen the time when impulses girdling the globe three times would be recorded at the starting point of each revolution a seventh of a second after takeoff?

At last, however, what Marconi had already accomplished was generally credited. *McClure's* editorialized: "Marconi and the ship's officers and others aboard the *Philadelphia* heard the tick and, looking at the tape, saw the dots and dashes which you or I or anybody can still see. When a machine does a thing, we humans believe; so long as a man stands between, we doubt."

We humans, then, believed. However, there were endless riddles to be solved. Marconi did not use the words "adequate apparatus"

lightly. He was plagued by the inadequacy of his implements, so far, to cope with a major difficulty. The record taken on the ship does not disclose this, but for over 700 miles, no messages were received by daylight. At night, they came in at better than 2,000 miles. As Marconi put it: "..clear sunlight and blue skies, though transparent, act as a kind of fog to powerful Hertzian rays." Twenty years later smaller and smaller waves would overcome the "daylight effect."

At the time, however, so primitive was the knowledge of electrical waves that it is not surprising Marconi should have thought that perhaps greater power would penetrate that fog. The power at Glace Bay, he concluded on shipboard, must be stepped up. The Canadian plans needed to be revised. What he had in mind was a 50-watt alternator, twice as large as the one at Poldhu. The cost and the time for installation would be prodigious but nothing could be allowed to stand in the way of attaining commercial service.

Vyvyan went with Marconi to Table Head, where he would remain in charge, and found that by great good fortune he could buy the alternator they needed second hand. This would greatly advance the operation. Still it would be months before the station was ready to function. Vyvyan first had to enlarge the buildings. He used a crew of out-of-work miners from the mine directly beneath the station—Poles, Italians, Americans, Canadians, and Indians.

While Vyvyan was engaged in this complex building job, Father went to Ottawa to reach a final agreement on the contract. Only one new clause was inserted by the Canadian government: The rate for wireless messages should be no higher than ten cents a word. Though the signed contract was not designed for the purpose, it was a strong answer to the cable company's objections to wireless. This was a price they could not meet.

Father looked in once more on Cape Cod, then shuttled back to England where, in June, he filed application for another patent. Poole was the birthplace of this innovation; Sir Ernest Rutherford, who had done work along similar lines in 1895, was its forefather.

On a rarely beautiful early morning, Marconi left his laboratory in the Haven Hotel and mounted his bicycle (he still loved to wheel through the country) to ride into Bournemouth, 15 miles away. Along the road he passed clumps of rhododendrons in riotous bloom. In Bournemouth, Father went from shop to shop looking for the thinnest possible wire. He could find nothing that would do until he remembered a flower shop where he had frequently watched a pretty girl wind the stems of flowers for corsages with wire as thin as button thread. She gladly supplied him with as much as he wanted and his bicycle sped back to the Haven.

Could Mr. Kemp give him a box? Kemp, the dependable, provided a box as unquestioningly as he provided everything else his boss needed. Father sat down and in less than fifteen minutes his deft hands put together what was subsequently described as a "jewel of workmanship."

The coherer had, all along, been the weakest link in the chain that produced Hertzian waves. At sea it reacted to the vibration of motors, the rolling and pitching of the vessel. What Marconi tagged his "magnetic detector," since it picked up impulses from a moving wire belt (hence the need for wire) that traveled under a pair of horseshoe magnets, was sufficiently sensitive to register electric impulses but insensitive to the movement of ships. This was the "jewel," created in a flash, although the plan for it was clear to him long before he mounted his bicycle on that bonny day. Now it was done and the summer belonged to him.

Here was a break he had earned by driving himself unremittingly for two years. The three balls he had been juggling since early in 1900 were safely in his hands. The Company was going well, the Atlantic had been conquered, and selective tuning was established with the "four sevens" patent. His mother and his colleagues urged him to take a holiday. Instead, he went to sea.

CHAPTER FIVE

While Marconi journeyed west, Solari went east to Italy where he asked for and got an audience with King Victor Emmanuel. On this occasion he told his king that Marconi dreamed of experimenting in an Italian ship. The response was handsome, as Luigi had known it would be. Marconi was important to modern Italy, a nation which needed to catch up before it could take its place in the sun. The Italian Navy, as its young lieutenant, Solari, had confidently predicted, was instructed to put a ship at Marconi's disposition. The cruiser *Carlo Alberto* was chosen, a signal honor, as it was the bright particular star of the fleet, detailed to take part in the festivities attendant on the coronation of Edward VII. Admiral Morin, Minister of the Italian Navy, issued an invitation to Marconi to join it after the Spithead review for its return to Italy in the summer of 1902.

For a man who had always had to make do on Atlantic liners where he was a paying passenger or guest, the prospect was gratifying and heady. The *Carlo Alberto,* a magnificent ship, was Marconi's first floating laboratory. He had his own "technical staff," small, young, and companionable. Marconi was head man, Lieutenant Solari, second-in-command, and the third was a midship-

man, Giuseppe Raineri-Biscia, a Bolognese whose family were friends of the Marconis. Giuseppe kept a diary of that wonderfully romantic cruise.

Midshipman Raineri-Biscia, by the time he loaned me his day book, had become Admiral Raineri-Biscia, and the diary itself had contributed to his rise. In elegant script, illustrated with line drawings, he expatiated therein on the beauties of the *Carlo Alberto*'s "modern" design, devoted a section to his conclusions about winds and currents off the Mediterranean shore of Gibraltar, kept a seaman's meticulous log and a personal memoir. It is a splendid record, so splendid that I am told it earned him a promotion of two grades.

"On the morning of June 18, 1902," he wrote, "we [Marconi was not yet with them] steamed in view of the English coast and the high masts of the Poldhu station appeared on the horizon. We exchanged telegrams of greetings. I confess to having felt tremendous emotion on being present for the first time at this new method of communication."

A few days later Admiral Mirabello, commanding officer of the *Carlo Alberto,* received disconcerting news: King Edward was about to undergo an operation for appendicitis and the review was canceled indefinitely. Return to Italy was, therefore, imminent, and he put in at Poole to allow Marconi to come aboard and make arrangements for his experiments.

The ship's company gave Father a welcoming dinner, at which a long friendship began between the Admiral and the scientist. Not to be outdone in generosity, Marconi gave the *Carlo Alberto* his magnetic detector.

Next morning, Marconi went to London to attend to business, thinking he had several days free before they would leave for Italy. The ship proceeded to Weymouth where Mirabello's orders were changed again. Victor Emmanuel had decided to visit Czar Nicholas at Kronstadt, Russia's great naval base, and the *Carlo Alberto* was to be in attendance. There was no time to waste. It was already Saturday, July 5, and the ship was expected in Russia on July 12. Mirabello wired Marconi in London asking him to come along. Without waiting for an answer, he took the wire-

less equipment and Kemp aboard and sailed for Dover, where he hoped to pick up Marconi.

Marconi's answer was not received until Monday. It said he would be on the dock at Dover Tuesday morning. All during the night it took the ship to run from Poole to Dover, Kemp and Raineri-Biscia worked to erect a new mast and spread a fourfold aerial between it and the permanent mainmast, and lead a line into the wireless cabin.

At a quarter to eleven the next morning, Raineri-Biscia was on the pier at Dover to meet Marconi. The two of them made the ship at the double. Her anchor was stowed, her engines turning over as they raced down the dock. An hour later Marconi was at work.

Poldhu had instructions to send the *Carlo Alberto*'s call letters —*CD*—and the news of the day. Marconi, Solari, and Admiral Mirabello, using a telephone coupled to the magnetic detector, received signals from Poldhu, five hundred miles away, at five minutes past twelve. On Wednesday the aerial was hooked up to the Morse machine and recorded messages without a hitch. As the ship moved into the North Sea other stations were tuned in (by now there were twelve European shore installations). To their dismay the detector did not dispel the effects of atmospheric disturbances. But, at hundreds of miles and across the British Isles and the breadth of Denmark, dots and dashes were recorded from Poldhu, though erratically. Marconi notified Finch Lane he was in touch as far as Gotland and wished Poldhu to continue its program of sending, but only at night. Over five hundred miles he still got nothing by day.

They could not find the answer to the riddle. For a half hour before dawn and after sunset Poldhu engineers transmitted the letters *S* (three dots) and *V* (three dots and a dash). Marconi and Solari worked the greater part of the intervening hours in the small cabin. They stayed awake, somehow, hopefully adjusting their instruments but as the first traces of light appeared in the sky through the porthole, the signals of the night faded and ceased. Marconi was reduced to cursing in his Bolognese dialect: "Damn the sun! How long will it torment us?"

They tried everything, wearily scaling the masts while the ship was making full speed ahead even in heavy weather. One expedient they tried was to drape a canopy of thin copper wires over the steel ridgepole they had strung between the masts. Raineri-Biscia made a fine drawing of the rig in his diary. Alas, it did not work.

On Saturday morning, July 12, the *Carlo Alberto* came within sight of the five grim fortresses at the entrance to Kronstadt roadstead and the onion-shaped spires of the port's churches. When the Italian cruiser dropped her anchor, Russian officers came aboard to pay their respects to Admiral Mirabello.

The Russian fleet was in and the social comings and goings were even more hectic than the ones Father had experienced at Cowes. But, as at Cowes, his work went on. Now even night signals failed him and he began a patient series of adjustments.

On the evening of July 15 he was rewarded. Messages from England were received in Russia, a distance of 1,600 miles.

The next morning the festivities began in earnest for him and he took time to enjoy them. Yet when the Italian Admiral asked him to come to Krasnoie-Selo for a military review, he was impelled to refuse and stay aboard ship.

The King and the Czar announced they would visit the *Carlo Alberto* the following day. Marconi was in a dilemma. He knew they would wish to see messages sent, which was simple, and received, which was impossible. Nothing would come through from Poldhu after sun-up and the two rulers could hardly be asked to come back after dark.

Solari master-minded a solution. He installed a small transmitter at one end of the ship and prepared to send a message of homage to Nicholas while Marconi demonstrated the apparatus.

I have an Italian newspaper story of that day. The imperial yacht *Alexandra,* with the monarchs aboard, dropped anchor close by the gaily beflagged *Carlo Alberto* while the flotilla of ships in the bay let off volleys till clouds of smoke enveloped the scene. Hurrahs from the Russian crews floated across the water. Victor Emmanuel was first to board the cruiser to the strains of his national anthem. Gusts of wind carried the sound of the march

played simultaneously on all the Russian ships. The *Carlo Alberto* crew shouted *"Viva il Re!"* and the royal standard was broken out on the foremast.

Then Nicholas boarded, to the strains of the Russian national anthem. Followed by his officers, he reviewed the ship's company and talked with Victor Emmanuel. In a few minutes, king and emperor went to the wireless cabin. Marconi was presented to the Russian ruler and, in English, explained the functioning of the instruments and showed strips of telegrams received from Poldhu. The Czar stayed for over half an hour, asking questions. When Marconi handed him the laudatory telegram he and Solari had composed, he asked where it had come from. Marconi confessed how Solari had arranged the special transmission. Smiling, the Czar asked to meet the enterprising lieutenant, so Luigi was called to the cabin and duly presented.

When it was all over there was a round of luncheons, receptions, teas, and dinners for the Italian Navy officers but again Marconi was too busy to go to them. He could not, however, escape the visits of the whole of the Italian colony which came down the canal from St. Petersburg, keener to see him than their ship.

One day a Russian caller arrived at the foot of the *Carlo Alberto*'s gangway and said to the Italian sailor who helped him aboard, "I want to pay my respects to Marconi, the father of wireless." That caller was Alexander Stepanovitch Popoff, the Russian scientist who had discovered that the coherer could be used to predict thunderstorms, and who was widely credited with the invention of wireless.

On the calm, smiling day of July 21, 1902, the *Carlo Alberto* weighed anchor, to salvos of Russian cannon, and sailed slowly out of Kronstadt. In the Gulf of Finland fog closed down and stayed with her as she refueled at Kiel and crossed the Baltic except for one propitious moment when it lifted to disclose the royal British yacht, *Victoria and Albert.* Edward liked to convalesce at sea and his cruise obviously benefited him, for Admiral Mirabello was notified that the Spithead review had been rescheduled and he was to proceed there as senior foreign officer.

On the first day Edward, on his yacht, passed majestically be-

tween the ranks of the greatest ships of Europe, drawn up to salute him and play "God Save the King." The *Victoria and Albert* came to rest to port of the Italian cruiser. This was glory. The next day was chagrin. The *Carlo Alberto* was to lead the foreign and British fleets past the English sovereign's ship. A capricious wind sprang up. Her anchor fouled and she passed at the end of the line.

Father saw the entire sad performance for, though he landed briefly at Poole, he rejoined his ship to supervise additional work on the wireless masts. When the review was over he was returned to Poole where he stayed while the ship was fitted at Plymouth and Coverack Bay for the Mediterranean voyage and loaded up with wireless equipment for other Italian vessels. This done, she anchored in front of the Poldhu station and her officers came ashore to see it. They were immensely delighted to find an Italian flag flying on British soil.

At noon on August 26, the *Carlo Alberto* set her course for Ferrol, Spain, with Marconi on deck ready to make a trial he had been contemplating, I think, ever since the day of the incident in Queen Victoria's garden at Osborne House. Then he had been wrestling with the possibility that the East Cowes hills might prove an impediment to Hertzian waves; now he meant to learn if they would transcend a far greater massif.

The ship coasted down past the western flank of Spain and Portugal to North Africa and on the night of September 4, entered the Strait of Gibraltar in thick fog. Marconi asked the Admiral to take a position which would keep his wireless sheltered by the Spanish sierras and plateau. At a great distance from Poldhu, with a rocky mass between sender and receiver, the future of his invention could be tested.

At two o'clock in the morning, Marconi, Mirabello, and Solari sat around the table which held his receiving instruments—detector and coherer. He put on the earphones: complete silence. Sensing the strain of the two wireless experts and not wishing to disturb them, the Admiral left the cabin.

At half-past two Marconi, sick at heart, went to find him on the bridge to tell him the news. "We have to wait for Poldhu's

next signals at three o'clock. The station may have had some slight mishap that would account for the silence at two. If there is still nothing at three, I am afraid we will have to conclude that the European continent is an insuperable obstacle to the propagation of electrical waves."

He went back to wait while the Admiral stayed on the bridge and his ship described slow circles through the fog.

Precisely at three the Morse inker began to print a long series of *V*s on the tape and Solari headed for the bridge at a flat-out run to call Admiral Mirabello. When he reached the deck he was half-blinded by a searchlight. With no intention of anchoring, the Admiral had failed to advise British port authorities of his presence and a cruiser, spotting the unaccounted-for ship on its crazy course, came to demand an explanation. The first bright beam was multiplied into dozens, cutting strangely through the murk, as a pilot boat left port. The Admiral ordered the helmsman to head for the open sea at full steam then went astern to the wireless cabin to read the messages which came in and continued to come in through the night.

Marconi was in bed with a high fever by the time they reached Cagliari in Sardinia and Solari diagnosed it as fatigue. However, he was on his feet again when they sailed for Spezia, struggling with arrangements for a telegram on tape he had asked to have sent from Poldhu. His plan was to record a message for the King of Italy on shipboard—which, having crossed Europe, would be a first of its kind—and give it to him on arrival. As the instrument began to record, Marconi realized that the operator in Poldhu did not know the Morse code. There would be a start, then a mistake followed, by way of correction, with a series of senseless dots. Worn out by anxiety and fever, Marconi succumbed to one of his rare, hot fits of rage. He thrashed out at the apparatus, knocking it askew on the table and smashing a large case of Leyden jars. At this Solari intervened, reminding him that he, Solari, was responsible for Navy equipment and would have to make good the loss to the arsenal of Naples.

When Marconi calmed down, he reassembled his machines, and

began to send instructions to Poldhu with what Solari called his "inimitable skill." As the answer came in he gave "a light touch to the relay, a lick of the thumb and index finger of both hands and a squeeze to the two extremities of the coherer, then a light knock to the hammer striking the coherer and the Morse machine began to function properly."

By the time Marconi was engrossed and cooled off, the operator in Poldhu had been replaced by a man who knew Morse and the telegram was transmitted correctly. A moment later, meaningless dots began to appear and Marconi muttered, "Poldhu must have changed to a longer wave length."

Syntonic instruments, to harmonize the length of waves between two stations, had not yet been perfected so for long waves Marconi used a special type of inductor made of copper wire rolled around an ebony cylinder and inserted in the tail of the aerial. He had used up his supply of these on the voyage. Poldhu would be off the air in a few minutes so he had to improvise, fast. He snatched up a broken candle, wound wire round it, and hooked it to the aerial. The royal telegram was received, Poldhu signed off for the night and Marconi went to bed while the ship plowed on to Spezia.

Solari made a full report of the scientific findings of the trip for the Italian Navy; distance did not limit the propagation of electrical waves so long as the energy used was proportionate to the distance to be traversed. Land and mountains did not interfere with communication. Daylight greatly diminished the intensity of the waves. Under adverse atmospheric conditions, the less sensitive the receiving instrument, the less it was affected by these. Combining the bare facts, he deduced that increasing power and using relatively insensitive instruments produced most stable results. It was only later that they learned that the magnetic detector, since it did not require constant adjustments, was superior in bad weather to any coherer.

Young Midshipman Raineri-Biscia, faithfully recording all aspects of the cruise, wrote that the ship stopped "to call on the Minister of Marine, Admiral Morin," at Forte dei Marmi. Like

all Italians returning from the grays of English sea and land, they were overjoyed at the intense blueness of the sky and the enchanting profile of the Alpi Apuane.

For Father in 1902 the pleasure was dulled by the knowledge that the *Carlo Alberto* would go on without him.

His sadness was premature. He would have to leave Italy but he would not be parted from the ship. From Spezia he went to Racconigi near Turin where the King received him. The Secretary of the Navy decided to dispatch the cruiser, though it was already the middle of September, on a second wireless trip, this time to Canada to be present at the inauguration of regular transatlantic wireless services.

The *Carlo Alberto,* after crossing through mountainous seas, which disconcerted Father not at all, passed Table Head on October 31. At any time of year the prospect is cheerless and after Italy it was grim indeed. I have a photograph of the first Glace Bay station as the men aboard the ship saw it that day. The striated rock of the headland pushes out into water clogged with huge cakes of ice and from it rise four immense wooden fretwork towers and a half dozen masts like elongated telephone poles. Below are two sizable frame buildings and one small, forlorn shack. Over all the sky is leaden.

The decks of the cruiser were heavy with snow when she anchored in the bay of Sydney that afternoon. The crew assembled on the upper deck as Marconi and Solari drove off in a sleigh to catch the train for Glace Bay. Across the icy air their voices rang out in a resounding cheer.

CHAPTER SIX

Vyvyan met Father and Solari at the gate of the barbed-wire fence that protected Table Head station from intrusion and showed them over the station. Father had a premonition of what was ahead: the next weeks were the most alarming of his scientific career. He therefore wisely instituted a regimen as formal as a ship's to carry them through such enforced proximity and severe strain in unfriendly surroundings. (One photograph shows Father with five engineers, looking like so many Russians in fur caps and boots, the clapboard station festooned with a fallen aerial fringed with icicles as tall as the men.)

At eight o'clock they sat down to dinner. Marconi, the youngest of the eight men, took his place at the head of the table. His assistants were seated according to rank. No first names were used. Actually everyone inclined to call Father *sir*. Solari wrote that Marconi at this time "showed all the geniality of his mind, all the authority of his character and all the activity of his organizing genius."

The morale of the men needed all the bolstering Marconi could give. For twenty-nine consecutive days no signals came through from Poldhu. At the beginning no one worried unduly, since only half the electrical wattage at the Cornwall installation was in use.

When it was stepped up to its full potential, there was still nothing and this was unnerving. To compound the tension, the company manager in London cabled that the price of Marconi shares was dropping, making financing for the tests hard to find. The world press reflected the general pessimism. As the days passed, the captain of the *Carlo Alberto,* which was standing by, came to the station to say his ship could wait no longer than Christmas.

The engineers were fumbling for a formula that eluded them. As Vyvyan said afterward: "Some combinations gave good results, some poor, but an arrangement that gave good results one night the next gave very different results and thus it became difficult to say for certain whether any improvement or progress was being made. In the light of our present day knowledge it is easy to see where the trouble lay; we knew nothing then about the effect of the length of a wave transmitted governing the distance over which communication could be affected. We did not even have the means or instruments for measuring wave length, in fact we did not know accurately what wave length we were using."

All they knew was that something was wrong—either the amperage at Poldhu was insufficient or the arrangement of machinery faulty—so they decided to experiment in reverse, sending from Canada to Cornwall. The first attempt was made on November 19. Poldhu picked up nothing. On November 28 signals came through but as a confused and unintelligible jumble.

Outside, snow fell incessantly. Local laborers shoveled to clear a passage between the sending hut and the plant. From the instruments the loud crackle and crash and brilliant flashes from the fifty-megacycle sparks assaulted the night.

On December 5 came the first partial inkling of success, a message from England: "*... weak signals for the first half-hour, nothing doing next three-quarters, last three-quarters readable and recordable on tape.*"

Marconi's reaction was to stiffen. He dropped the jocularity with which he had tried to buoy up the morale of his men. That day he came to lunch, his jaw set, his look abstracted. His staff caught the mood and during the next eleven days worked as they

had never worked before. At seven o'clock in the morning of December 16 the miracle in which they believed came true.

Readable signals through two hours' programme.

Mad with relief and delight the men ran, half dressed, into the 30-degree cold and danced hysterically, then broke and dashed for the dining room where an enormous fire blazed. Marconi did not permit himself to indulge his own great joy. As soon as their high spirits quieted he held a council.

Messages to mark this event must be dispatched to the kings of Italy and England and to the governor of Canada. A representative of some great newspaper should be present to dispel any skepticism and to add a warranty to the success of the system. Before these messages went out, he proposed to ask the London *Times'* Ottawa correspondent, Dr. George Parkin, to the station. Under a pledge of secrecy, Parkin was to observe and then to take part in sending and to vouch for the first transatlantic message. (Father always had a nice sense of history. As far as possible, he planned those events in which he was involved, timing and underlining them for posterity.)

At the same session, he considered the delicate matter of protocol. Should the wire to the King of Italy or the one to the King of England go out first? His own inclination was to give precedence to Italy, as the wireless would have to be relayed to Rome and transmittal time would be greater. The two should consequently be received at about the same hour. The seven other men in the dining room found this just and reasonable.

On December 15 Parkin wirelessed London at one o'clock and again at three and at seven, but weather conditions were poor and his message only got through finally between ten and twelve. *Times London. Being present at transmission in Marconi's Canadian Station have honour send through Times inventor's first wireless transatlantic message of greeting to England and Italy Parkin.*

The story he then wrote gives a lively picture of the circumstances. "A little after midnight the whole party sat down to a light supper. Behind the cheerful table talk of the young men

on the staff, one could feel the tension of an unusual anxiety as the moment approached for which they had worked, and to which they had looked forward so long. It was about ten minutes to one when we left the cottage to proceed to the operating room. I believe I was the first outsider to inspect the building and the machinery.

"It was a beautiful night—the moon shone brightly on the snow-covered ground. A wind, which all day had driven heavy breakers on the shore, had died away. The air was cold and clear. All the conditions seemed favorable.

"Inside the building, and among its somewhat complicated appliances, the untechnical observer's first impression was that he was among men who understood their work. The machinery was carefully inspected, some adjustments made, and various orders carried out with trained alertness. All put cotton wool in their ears to lessen the force of the electric concussion, which was not unlike the successive explosions of a Maxim gun. As the current was one of most dangerous strength, those not engaged in the operations were assigned to places free of risk.

"It had been agreed that at the last moment before transmission, I should make some verbal change in the message agreed on, for the purpose of identification. This was now done and the message thus changed was handed to the inventor, who placed it on a table where his eye could follow it readily. A brief order for the lights over the battery to be put out, another for the current to be turned on, and the operating work began.

"I was struck by the instant change from nervousness to complete confidence which passed over Mr. Marconi's face the moment his hand was on the transmitting apparatus—in this case a long, wooden lever or key.

"He explained that it would first be necessary to transmit the letter 'S' in order to fix the attention of the operators at Poldhu, and enable them to adjust their instruments. This continued for a minute or more and then, with one hand on the paper from which he read and with the other on the instrument, the inventor began to send across the Atlantic a continuous sentence.

"Outside there was no sign, of course, on the transverse wire

from which the electric wave projected of what was going on, but inside the operating room the words seemed to be spelled out in short flashes of lightning. It was done slowly, since there was no wish on this occasion to test the speed. But as it was done, one remembered with a feeling of awe, what he had been told—that only the ninetieth part of a second elapses from the moment when he sees the flash till the time when the record is made at Poldhu."

The messages were sent to the two kings and the governor of Canada, and Solari set out for Sydney to give the news to the captain of the *Carlo Alberto* and to fetch an Italian flag for the inaugural ceremonies. The flag was brought to Glace Bay with an escort of sailors. At a little before eight in a cold northern dawn, a small band of English and Canadians and Italians gathered at the foot of one of the towers. Solari indicated where the Italians were to stand. Marconi, head high and with military precision, walked up to them and stood bareheaded as the British and Italian flags went up together into the Canadian sky.

There were merry moments in the days that followed. One message read: *Times London by transatlantic wireless Please insert in birth column Jan 3rd wife of R. N. Vyvyan Chief Engineer Marconi's Station of a daughter. Marconi.* As if this were not garbled enough, it was received in part as "Jane 3rd wife of R. N. Vyvyan...."

A few mornings after the inauguration Father let out a shout of laughter as he read the Sydney newspaper, and passed it across the table to Solari: "Yesterday the Italian cruiser *Carlo Alberto,* which has brought to us that commander of space, Guglielmo Marconi, left our port to voyage to Venezuela. We shall long remember the officers of this ship that has contributed to making unforgettable the historical period during which matured the miracle performed by Guglielmo Marconi. Our Harbour without the *Carlo Alberto* now seems sad and deserted. But on the other hand tranquility has entered again into the intimate circles of many families."

Transatlantic communication, Glace Bay showed, was possible but not reliable—some messages were sent twenty-four times be-

fore they came through. Though he would have preferred to cease sending and devote his time to further experiments, Marconi kept messages dribbling through the Nova Scotia station and, with an eye to the financing so desperately needed, he left for the United States on January 10 to explore the possibilities of setting up a relay from Cape Cod to Poldhu via Glace Bay.

The reporters were waiting for him at Holcomb House in South Wellfleet—they knew they could not get to him at the station, which was barricaded with barbed wire. He arrived by the night train and did not even glance their way, but went directly to Ed Cook's carryall and drove off.

Years later at South Wellfleet I talked with Mrs. Joseph Beals, who had been a youngster in 1903 and remembered a great deal about the week Father stayed at Holcomb House. Her mother used to take her over to the "plant" and, she recalled, "lurid flares lit up the dark sky and the sizzling and crackling of powerful electric sparks and the leaping blue current sent the shivers down many an elderly, superstitious Cape Cod spine."

Mrs. Beals took me to call on old inhabitants who remembered, too, and she and I walked along the short-cut the men used to take from the freight station, now vanished except for the timbers of its platform, to the wireless station. According to Mrs. Beals, a "character" named Billy Hatch was watchman at the gate of the plant and he passed the time by playing the triangle and singing. Marconi heard him once and took Billy along to Holcomb House to sing and play while he accompanied him on the piano. Billy Hatch's watches were not entirely lonely for they were shared by Captain Paine. His job was to keep his buggy and mare at the ready. Huddled in his wolfskin coat and with two blankets over his nag, he waited, he claimed, for six days. When the time came he was to carry the news of success to the telegraph office at South Wellfleet for Jim Swett to put on the wires.

The message Jim was meant to transmit by wire to be consigned to the air, either via Glace Bay or direct, had been in Marconi's pocket for days.

On the night of January 18 between nine and eleven o'clock, it

was transmitted to Table Head, with instructions to forward it to Poldhu. At the same time Marconi sent it from Cape Cod and, to his immense joy, England received the message direct from the United States on January 19. "All of a sudden," Charley Paine told Mrs. Beals, "I see Marconi come tearing out of the plant with both hands full of white tape. He was just like a crazy man. 'You wait there, Paine, and I'll be with you in a minute,' he yelled and started for his office. I got my buggy all turned round and ready.... When he come out again he had two big envelopes in his hand. They were messages to be telegraphed to Washington and New York. 'Drive like the wind,' says Marconi." He carried verification that this message had been received:

His Majesty, Edward VII, London, England.

In taking advantage of the wonderful triumph of scientific research and ingenuity which has been achieved in perfecting a system of wireless telegraphy, I extend on behalf of the American people most cordial greetings and good wishes to you and all the people of the British Empire.

Theodore Roosevelt

South Wellfleet, Massachusetts, Jan. 19, 1903

The answer came back:

The President, White House, Wash., America.

I thank you most sincerely for the kind message which I have just received from you through Marconi's transatlantic wireless telegraph. I sincerely reciprocate in the name of the people of the British Empire the cordial greetings and friendly sentiment expressed by you on behalf of the American nation, and I heartily wish you and your country every possible prosperity.

Edward R. and I.

Sandringham, Jan. 19, 1903

The excitement was worldwide now but Cape Codders took it at a local level. At nine o'clock that night Mrs. Eliza Doane, who patched and sewed for and mothered all the men of the South Wellfleet station, served them a dinner of roast goose. Next day she gave them a lunch so American that it carries me back to that

pre-packaged era. The menu: oysters, turkey, Cape Cod cranberry sauce, turnips, squash, and Indian pudding.

Mrs. Doane later wrote about how all the doings seemed to South Wellfleet: "After the news of the establishment of communication was made known extra operators in Provincetown and Wellfleet had to take care of the messages which came in by telegraph. Telephones on the Cape... were rare. The King of Italy sent half a page of congratulations. It came via Provincetown telegraph office and by telephone to the little store at South Wellfleet. The fatigued storekeeper and his pretty clerk had been standing most of the day by the wall telephone with a pencil in one hand, trying to take down the names of men of importance it was stunning to contemplate."

That was the way it seemed to people outside the barbed-wire enclosure. Inside, Marconi worked night and day making adjustments. As Vyvyan said, "It was clear that these stations were not nearly in a position to undertake commercial service." So experiments continued.

The South Wellfleet station has passed out of existence, if not out of history. It was dismantled in World War I by the local salvage committee, its remnants converted into armaments. On the fiftieth anniversary of the messages between Roosevelt and King Edward, a handful of commemorators tried to place a plaque where the station had been. They had to content themselves with erecting it a mile and a half away where Wireless Station Road branches off from the main road to South Wellfleet Beach. Here stands a house fenced with cables taken from the wreckage of the transmitting towers, and here I found the plaque.

Beyond the road the area bristles with No Trespass signs. The land has been taken over for a military reservation. All that day I heard the guns boom at guided robot planes, circling dizzily above the high moor. Over the ridge, past the roaring guns, hangs the wreckage of the brick building that housed the oil generators of those pioneer transmitters, long since converted into arms. Nothing else remains.

CHAPTER SEVEN

The Marconi Company barely survived the financial drain imposed by falling stock values and skyrocketing costs for new stations. Fortunately, by the time of Marconi's return to England, the chairman of the board, Sir Euan Wallace, was able to announce to his directors for the first time that income exceeded expenditure.

Earnings rested mainly on a fourteen-year contract with Lloyd's licensing twelve ship lines to use Marconi equipment operated by Marconi men (ship-to-shore sending was still the bulk of the business) and from fifty-four land stations. Also the London *Times* had undertaken to have stories transmitted by wireless and the British Post Office was negotiating to increase its services at press rates.

The Marconi Company was doing business internationally, of course, but not very profitably as yet and at least one major country was trying to compete without using Marconi's patents.

Germany, to whose Professor Adolphus Slaby great courtesies were shown at the time of the early experiments and who confessed, "I had not been able to telegraph more than 100 meters through the air," was striking out on her own. Slaby set himself to make changes in the Marconi system so significant as to put Germany in a position where she could ignore the Marconi patents

(and royalties). However, Slaby's devices were far from satisfactory, based as they were on Father's original, tentative findings. The Germans proceeded to try by unlawful means to get what they could not produce and were unwilling to buy.

A German fleet anchored, on a hot summer day, in the dangerous waters of Glace Bay and its Admiral came ashore at Table Head with thirty officers. When Vyvyan saw that they were heading for the station, he met them at the gate in the barbed wire with cool drinks. This was a technique he commonly employed to discourage reporters and the curious sightseers who constantly turned up. It did not suffice for the Germans.

The refreshments, he wrote, "were declined and the Admiral stated that they had come to see over the station. I informed him that I should be delighted to show them over. Doubtless he had a letter of authority from Marconi or the Directors of the Marconi Company authorizing me to do so. He said he had not; I expressed my regrets that without authority it was impossible for me to admit him. He became very brusque and informed me that His Imperial Majesty would be much annoyed. Again I expressed my regrets and he and his staff went off, again declining any refreshment.

"The fleet stayed at anchor and I kept a watchman on one of the towers to report. Next day boats put out from the fleet and in due course a crowd of about 150 sailors arrived at the gates. Apparently there were no officers with them; they pushed past me in an unruly mob. I informed them admission was forbidden and if they persisted I would use force to prevent them entering the station. At the time, we had a considerable body of workmen employed on certain construction work, and when they saw these men it seemed to strike them that there might be trouble. A whistle was blown and they all went out, a disciplined force, and no longer an unruly crowd of men."

At about the same time, Prince Henry, the Kaiser's brother, en route from Hamburg to New York, flashed an order to the Marconi Company from off the coast of England, to relay his personal messages. The Marconi operators inquired if he were

in need of assistance. Otherwise they were under no contractual or international obligation to handle his traffic.

Relations between Marconi and the German Reich were exceedingly cool after these incidents. The company took care from then on not to hire Germans for fear they might be informers.

Italy, on the other hand, honored and appreciated its man. Prince Prospero Colonna, the Mayor of Rome, invited Marconi to return to the capital to receive honorary citizenship. My father was delighted. To any Italian, Roman citizenship is the greatest of privileges. A Roman is citizen of the world.

First he went back to Bologna for a few days to see his family. His father was over eighty in 1903 and his health had failed so greatly that Annie Marconi was spending more time with him than she had for years. Both Giuseppe and Annie welcomed Guglielmo and took part in the public homecoming of Bologna's world-famous son.

The reception he was tendered there moved him more than any other because it came from friends and neighbors. Even his stern defenses against emotion crumbled at the outpouring with which he was greeted. At the University where he had not even been able to matriculate, his old hero, Professor Righi, made a welcoming speech which reduced tough old Giuseppe to tears of joy and filled reserved young Guglielmo with such unexpected shyness that when he got to his feet he was incapable of responding. His cheeks flaming with embarrassment, he stumbled back to his seat in silence.

For the trip to Rome, Giuseppe Marconi drew on what was left of his waning physical resources. With his wife and son, he rode through its streets in Prince Colonna's state coach, drawn by cheering students who had unharnessed the horses and taken their place between the shafts. Beside Annie he sat beaming while their son, his shyness gone, made a speech to the King, the Queen, the Ministers and, most stirring to Guglielmo, the scientists of Italy.

On this occasion, my father, who had always shared credit, showed an almost mystical humility, saying "...in truth teleg-

raphy without wires is no more than a simple consequence of observing and studying the means employed by nature to obtain her effects of heat, light, of magnetism across space. As the heat and light of the sun upon which depend the life of our planet are transmitted across millions and millions of kilometers of space, as the light of the most distant stars, as the electrical and magnetic perturbations of nature are manifested to us after having crossed the most immeasurable distances, it appeared to me that by adopting means similar to those adopted by nature, it should be possible to transmit these effects at our will. . . ."

At a court dinner the German row flared up again when Marconi was presented to Kaiser Wilhelm II, then a guest at the Quirinal. The German Emperor's manner was correct and strikingly uncordial. "Signor Marconi," he said, "you must not think that I have any animosity against yourself. It is the policy of your company I object to."

Marconi was equally correct and equally uncordial. To his eternal credit he replied, "Your Imperial Majesty, I should be overwhelmed if I thought you had any personal animosity against me. However, it is I who decided the policy of my company."

A little later at Berlin a scientific congress was held where Germany hoped to assemble enough data to perfect its imperfect communication system. Marconi by-passed it and sent Solari, who reported that much breath was spent in sneering at the advances of wireless, designating them as fantasies in the minds of Signor Marconi's friends. Solari, never a patient man and maddened by any attack on his old friend, protested ringingly, then marched out. Though he could not take credit for making it so, he was overjoyed that the German conference proved a thorough-going fiasco.

Nevertheless the Marconi Company, outraged by the German sneers and still in a shaky financial position, felt that further public demonstrations would be advisable. Any misunderstandings as to capabilities of Marconi's inventions could be most unfortunate.

Father set off on the *Lucania.* Passengers, in relays, were asked

to watch wireless at work and sign statements describing its performance. One of the first operators, C. J. Weaver, has left an account of what wireless transmission was like: "The transmitter received its power from a bank of storage batteries and the crash of the spark in the open gap was a source of continual annoyance to those cabin passengers so unfortunate as to be quartered near the wireless room.... The old key which was used to break the heavy current... was actually 'pounded' and was equipped with giant platinum contacts. The maximum speed we could handle was about ten words a minute. And even at that slow rate of transmission operators would soon tire, mostly of strain in the arm, as the key worked like a pump and required considerable expenditure of energy...."

In addition to these demonstrations, Father utilized an earlier idea to further publicize his and his assistants' achievements.

The *St. Paul,* on November 1, 1899, had published Volume I, Number I of *The Transatlantic Times,* a news bulletin. On the *Lucania,* he inaugurated the *Cunard Daily Bulletin,* a ship's paper that set a pattern which continues to this day. It caused great excitement in America and put Marconi on the front pages of the newspapers for days.

One event of the crossing which received no publicity was that Marconi lost his heart. He did so with fair regularity but this one seems to me the most unlikely attachment he ever formed. Except for her beauty, Inez Milholland embodied everything he basically disapproved. She was a confirmed bluestocking and a feminist. As a pioneer suffragette I believe that she rode up Fifth Avenue on a white horse. Nevertheless, he proposed and was accepted. The romance did not last long. It was soon superseded by a more serious one and the lovely Inez joined Josephine and countless other pretty women as only one of his passing fancies. However, she remained a very good friend.

The few weeks in America were marked by two unlikely occurrences: Father drank too much on one of them and ate too little on the other. He was an official guest at the St. Louis Exposition and came to grief after making acquaintance with a

mild-looking drink called a "mint julep." By the time he had drunk several toasts and it was his turn to speak, he could not stand up. He seriously believed he had been poisoned.

Edison, still eager to meet the "young fellow," invited Marconi and Solari to visit him at his house in Orange, New Jersey. First he forgot to answer the doorbell and they nearly left in despair. Then, after he let them in, he became so absorbed in talking about his work that he forgot lunch. My father at last hinted broadly and in a flurry the great inventor produced cheese, crackers and bread. There was nothing to drink but water. Marconi, still shaken after St. Louis, felt it might be better that way.

Father loved meeting the old giant. Mr. Edison's skepticism had quickly and warmly turned to generous and fatherly recognition, whereas his own father, Giuseppe Marconi, had been reluctant and begrudging in the early days.

Poor old Giuseppe Marconi had become increasingly dour as he grew old. People who knew him observed how he had turned bitter, egocentric and tyrannical, mean for meanness' sake with those he had once loved and who had loved him. Living out his years as a country gentleman, his small successes dwarfed by his son's, his position as *paterfamilias* hollow, the old man had for some time left Villa Grifone during the winter months and moved to the Palazzo Albergatti in Bologna's Via Saragozza where his wife Annie joined him when she could.

The trip to Rome had been a mighty effort, and his last. Back in Bologna, on March 28, 1904, he battled pneumonia through the night and died at dawn. I think of him as pathetic and lonely. My cousin, Pietro Marconi, a boy of twelve, was wakened in the middle of the night, he remembers, and taken to Grandfather's bedside to pray. My grandmother was beside him, her head bent.

She buried Giuseppe in the Marconi family vault in the exquisite old cemetery of the Certosa in Bologna. Then she returned to England. They had been married for forty years. For sixteen more she lived on in London. Ironically, this Englishwoman was homesick for Italy until the day of her death.

Absorbed in company troubles, my father could not go to Italy for the funeral. The Marconi Company finances were in bad

shape, and the business required total attention. He could not find the hours of solitude to do the experimenting which would improve wireless and make it pay its way. At thirty, his nerves were dangerously frayed, he was disheartened, and near the end of his endurance. In spite of repeated demonstrations, confidence in the commercial future of wireless was at a low ebb in Ottawa and London. He told Luigi Solari bitterly, "A man cannot live on glory alone."

PART III

CHAPTER ONE

At a time of thorough disillusionment, Marconi fell head over heels in love. Late in the summer of 1904, when he claimed he had had his fill of glory, he met nineteen-year-old Beatrice O'Brien, daughter of the thirteenth Baron Inchiquin. My father was anything but an impulsive man, yet the moment he saw her he knew that he wanted to marry this high-spirited country girl, so beautiful, so naive and so abominably dressed. ("The dress she had on was *awful!*" he always said.)

The Inchiquin O'Brien world was astronomically remote from the Marconi world. Beatrice's father was descended from that warrior king of Ireland, Brian Boru or Brian Boroimhe, who was slain in his tent in 1014. Thereafter there were always sons to carry on the name—Dermod, Mortogh, Torlogh, Teige and Donough—until by the thirteenth Baron Inchiquin's day, the family had unrolled through twenty-seven generations, as Barons Inchiquin or Marquises of Thomond, in direct succession. One of his ancestors, Murrough O'Brien, made submission to Henry VIII in the first half of the sixteenth century and as a result the O'Briens retained great privileges. Even the married women of the family had the right to royal colors and a crest.

The last time the Inchiquins used their state coach, bearing the

royal arms, another of their hereditary rights, was at Queen Victoria's jubilee. Lilah O'Brien, Beatrice's sister, tells of how their father took her and Beatrice to the coachmaker's in St. James's Street where it was kept. While he issued instructions about the turnout, the two little girls enjoyed their ancient privileges by hopping in and out of the carriage squealing with glee.

Under the terms by which the family retained its title and estate (or what remained of the original Dromoland property in County Clare) the Inchiquin O'Brien children were bound to be brought up in Ireland, the sons educated in England. It was a system by which British monarchs in ancient times held near-autonomous lords in the marches as vassals. The thirteenth Baron kept a residence at Hereford House in London and sat while Parliament was in session as a representative peer for Ireland, but he was domiciled on his Irish acres and was never an absentee landlord.

The huge family (Beatrice had seven sisters and six brothers as well as countless cousins scattered through England and Scotland) visited at large but lived at Dromoland. Here Beatrice grew up. A tomboy who could give her brothers a good game of tennis, and could ride and sail, she delighted in hare-brained escapades. When they were in England they all loved their visits to the Coke cousins at Holkham in Norfolk best. This was a perfect place for running and hiding with its formal Italian gardens and miles of corridors, so long its mistress, Beatrice's Aunt Alice Leicester, complained that it took fifteen maids to keep them in order.

Sandringham was next door and the royal children came as often as they could for long stays. One corner of the vast Palladian quadrangle of Holkham was reserved for them and before they arrived their servants were sent ahead to see that everything was in readiness. Edward was particularly finicky. Beatrice took dancing lessons with the young Princesses—Ena, later Queen of Spain, among them. She played hide-and-seek with George, long before anyone imagined he would ever ascend the throne.

At the end of the English sojourns, shepherded by nurses and governesses and tutors, the O'Briens piled into the low white

trains of that day, balancing pails crammed with frogs and baskets packed with favorite snakes they hoped to introduce into Ireland. All the train attendants knew the children and cheerfully let them commandeer cars for their own use. When they reached home, white-wigged footmen were waiting to lift down the pails and baskets full of contraband, the mountain of luggage and the perambulators—in a family so large there was always a baby or two.

Beatrice's father had stood out against Home Rule, for which Disraeli tried to reward him by reviving the lapsed Marquisate of Thomond, but he was an Irishman through and through. As a dedicated agriculturist, he took the well-being of the small Irish farmer very much to heart. And he was a man of unswervable probity. An eminent English judge, named Atkinson, told my mother that her father's sense of honor was so strong that, though he stood to gain and no one would be hurt, he would not, under great pressure, shade his testimony. The fact that Dromoland was one of the few castles left ungutted in the Irish troubles attests the love and respect in which he was held. Voluntarily, the people of the county formed a cordon around the house to protect him and his family. At the peak of the violence, Inchiquin went his way freely and refused to go armed. The children were told to leave their windows wide open, their curtains undrawn so that all men might know they were not afraid.

These were rather pleasurably scary days for the young O'Briens. They left no scars on the youngsters whose lives were a merry kaleidoscope of changing faces. Each of the brothers was sent to a different public school before going up to Oxford or Cambridge and each one brought his friends home to Dromoland which was said to have the best shooting—and to be the most fun—in all Ireland. Despite footmen and a fair share of protocol (O'Brien sons addressed their father as "My Lord" and stood at his approach) existence was on the whole hilarious for them. Out of the gay years came an immense sense of family solidarity and loyalty, centering on the head of the house.

Around Lord Inchiquin revolved this diminutive kingdom with its many-acred orchards, stock and dairy farms, its sawmill,

smithy, and carpenter shop. Two liveried coachmen with helpers looked after the ten carriages; grooms cared for the hunters; and gamekeepers and their families lived in the six gate lodges.

Inside the battlemented house were the two governesses and a tutor, domestic servants, maids, and cooks. The schoolroom and the nursery each had its liveried footman. One man did the boots and trimmed the wicks of ninety lamps each morning. When one of Beatrice's brothers, alarmed at the profusion of the household, proposed that the same footman might pass the gravy and the bread sauce, his father was shocked . . . it would cause anarchy in the pantries.

Like any proper Irish family, they were more than a little mad and had one eccentric. Lady Inchiquin's mother, Lady Annaly, lived with them and infuriated her son-in-law. The tiny lady with a face like a marmoset's was a Scot, a Stuart, and she looked, Beatrice recalled, like a very smart monkey, not clever-smart but chic-smart. She wore black satin bonnets frilled in lace dripping velvet streamers and huge-sleeved black satin dresses, with enormous style, despite which her manners were flagrant. Lady Annaly detested eating at the dinner table and feigned lack of appetite at the very moment she was smuggling tidbits into her sleeves and pockets. Later she would consume them in the drawing room or the musicians' gallery, strewing the crumbs and scraps around her when she got up or, if she remembered, secreting them behind the curtains.

One night in London her two extremely fashionable sons (Luke was equerry to King Edward) came home from a ball at two in the morning to find their mother, her gray hair unpinned and hanging down her back, on her way to the pillar box to post a letter in her nightgown. She was indignant when they insisted on going with her, one on either side.

But of all the stories of this odd old woman the one that the O'Brien children loved best was about when her son-in-law, a passionate amateur photographer, was drying his plates on the terrace at Dromoland one day and she dumped a pail of slops out of the window on him.

He rushed up to her room raging, "Lady Annaly, I'll thank you not to empty the slops. I have maids to empty the slops."

She was impenitent and uncowed. "Most unfortunate, Inchiquin," she retorted, "that you should have been there when I did it. Most unfortunate."

My grandmother, Lady Inchiquin, did not share her husband's fondness for the country and spent as much time as possible in London. Born in Luttrellstown, the beautiful Annaly Castle, she had grown up abroad in brilliant surroundings, the like of which she wanted for her daughters.

Some years before she met Guglielmo, Beatrice went walking at Dromoland with her favorite sister, Lilah, so close in age that they seemed like twins. They were small, darting satellites of their father who, ax in hand, was blazing trees in the woods to be felled. When he stopped to rest in the path and they scrunched down on the ground at his feet, he told them of a wonderful young Italian who had come to England with an invention that was almost magical. They listened enthralled.

Everything her father said that day in the quiet shade of the trees was heightened and fixed in Beatrice's mind by the fact that she lost him soon afterward.

Lord Inchiquin died in 1900, deeply disquieted about the future of all of them. The fortunes of Dromoland, on whose continued productivity his own and so many tenant farmer families depended, were dwindling. All available money, and theirs was not a cash economy, had gone into educating the O'Brien boys for positions of responsibility. Though Lilah, who showed real promise as a painter, was later sent off with the youngest girl, Dorrien, to a finishing school in Dresden, the sisters received only the meagerest and most desultory instruction from a succession of French and German governesses, with a little music and painting added. To present them at court in England would, he knew, be ruinous, yet somehow it must be managed.

Their mother and the children, except for Beatrice and Lilah, were off at the viceregal lodge in Dublin to welcome Queen Victoria when Lord Inchiquin was stricken with his last illness. The

two girls, wanting more than anything in the world to do something for their adored father, took stock of their ability to help and, to their horror, realized that they did not even know how to brew a pot of coffee.

After the thirteenth Baron Inchiquin died, a procession four miles long of the Irish, including his men and his neighbors, followed the farm cart that bore his coffin from the castle to his grave. The title, the lands, the house descended to his eldest son, Lucius, who became head of the family.

Lady Inchiquin was left with eight daughters and eight problems. She could not afford to keep them hidden. Nor did she wish to. It was also expensive to bring them out and she was forced by the change in her circumstances to show them against other backgrounds than Dromoland. Whether she liked it or not, the estate was no longer hers and, to supplement her insufficient income in the large house she took near the Marble Arch in London, she drew on her wits and worldliness. Being wonderfully good company she was in great demand socially, constantly visiting her infinite family connections and friends, as was the habit of the day. Out of this came endless articles, gossipy and gay, which appeared, always under assumed names, in papers and magazines. She not only noted what she saw for the delectation of her readers but also dragooned her children into leaving chits under her bedroom door when they came home at night, describing their balls and parties.

Nevertheless Beatrice was unsophisticated and young for her age as a result of her casual, happy country upbringing—though anyone wise in the ways of the Edwardian world would have sensed that here was a novitiate worldling. Her fashionable mother was undoubtedly angling for a peer for her. A younger son would never do.

Lady Inchiquin and Beatrice were visiting Lady Howard de Walden at Chirk Castle when an invitation arrived from one of their many friends, Mrs. Van Raalte, for Beatrice to come to stay at Brownsea Island. It was not customary for a young girl to go off on her own so the ladies consulted as to the advisability of accepting. Lady Howard de Walden was strongly in favor—

Mrs. Van Raalte was charming and had three children Beatrice would enjoy. Their island, which they had recently bought, had a fine old castle that they had renovated and made luxuriously comfortable. Indeed, it was a perfect place for the girl to spend the last of summer. And surely nothing could happen to her!

So Beatrice went. Almost the first name she heard from Mrs. Van Raalte was that of Marconi. What her father had told her came back to her and she coupled that with a great deal more. In the course of her amateur reportorial training she had learned that he was much in demand during the London season, above all at the famous Friday evenings of the Duchess of Sutherland and at the house of the Viscountess Falmouth, who was said to adore him. She knew, too, that he and Ivor Guinness and her flirt of the moment, Lord Howard de Walden, each had a Mercedes, practically the first motorcars in England, and that they raced each other. She herself, enveloped in a protective linen duster and half hidden behind goggles, had already ridden with Howard de Walden and they had run smack into Chirk Castle, emerging shaken from the impact (their vehicle had been making its giddy top speed of 15 miles an hour when it piled into that fifteenth-century wall). Not a stone, however, was dislodged.

Beatrice's thoughts returned to what Mrs. Van Raalte was saying about Marconi. Poole, her hostess pointed out, was only five miles across the harbor from Brownsea and he came to lunch often in his boat. He was due today and she would like Beatrice to walk down with her through the woods and gardens to meet him at the dock. Why me? Beatrice wondered. Marconi had been young a long time ago. He must be quite old by now. Thirty? She preferred the company of the Van Raalte children to her elders. She did not admit it to herself but Marconi sounded much too famous and grand to be a friend of hers. Still, there was no way that she could refuse, so she went to her room to change.

There was one glamorous item in her wardrobe which she put on to bolster her ebbing self-confidence. Lilah and she had won a prize from a lady's magazine for the best design for a bathing dress. "This prize," said Lilah, "comprised a permit to acquire perfumes, which we had no use for, so I managed to get it

changed for shoes." The shoes—she decided to wear them—were satin as was the dress which she had made herself. Both were obviously intended to be worn in the evening and indoors. When Beatrice tripped on the Brownsea pier, a heel tore off. She was a sorry spectacle, but Marconi, as he came up the steps, was bedazzled by this young lady with high color and flashing dark eyes under masses of wavy hair.

Lilah's precise description recreates the girl he saw waiting for him. "Though Bea, from the age of fourteen, had a wonderful figure, rightly formed and in after years a joy to dressmakers, with a straight back and long legs, she was not at all well dressed when G.M. was courting her. Later she would be regal in evening dresses and all her clothes hung well on her but Marconi told me the real proof of the greatness of his love was that it did not matter to him what she looked like, he loved her all the same."

Marconi found the distance between Poole and Brownsea increasingly easy to traverse in the next days. Science was abandoned. He came at all hours to the hospitable Van Raaltes' and when their houseguest took refuge in tea and games in the schoolroom, he left his hostess and went gravely to the schoolroom, too. Almost at once he told Miss Beatrice O'Brien about Miss Inez Milholland. What he told her was that he was asking that American lady to release him from his engagement instantly. All he wanted now was to spend every minute with his Bea. Or at least he hoped that she was going to be his.

He besieged Mrs. Van Raalte for permission to drive her young guest back to London. Mrs. Van Raalte, surprisingly, encouraged his suit though she had no idea how the child's mother would take it. However, this was really going too far. A young girl drive to London with a man? Outrageous. So Beatrice, chaperoned by her maid, went home in a dull train, fretting all the way at the excitement she was missing. Marconi washed his hands of Poole and its troubles and followed her to town where he succeeded in spending the least possible time at the company offices and the most possible in the house near Marble Arch.

A few days after the return to town there was a charity ball, organized by Lady Inchiquin, at the Albert Hall. Marconi, of

course, took a ticket to be near Beatrice. He hunted for her frantically through the throng and found her at last looking pretty and a little wistful at the very top of the long iron stairs of the outer lobby. In this preposterously unromantic spot, he asked Bea to marry him.

Bea was torn. She was deliriously proud that her suitor was so famous and, her father had told her, so wonderful a man. Still, when she was with him she felt constrained rather than responsive to his ardor. He seemed strange, not like the beaus her own age with whom she waltzed and flirted. She convinced herself, with some justice, that she scarcely knew him and hence that she did not care for him "that way." It struck her, too, that his being foreign was an immense obstacle, though she was too embarrassed to tell him so. Instead she took an evasive course and asked him to give her a few days, so she could talk it over with Lilah. This was nonsense and she knew it. Lilah was in Dresden.

The days passed with Marconi, wild for her decision, running one of his temperamental fevers and deluging her with express letters by "button boys." This was delightful, as she said, *fun.* She had never had any before. Still she wavered.

At last she let her young man come to tea and told him that she did not care enough and that Beatrice O'Brien respectfully declined the hand of Guglielmo Marconi.

CHAPTER TWO

Marconi behaved like the jilted suitor in a romantic Victorian novel. Wearing his broken heart on his well pressed sleeve, he took off for Turkey, Bulgaria, and Romania. Unlike his fictional prototype, he did company business in these far places, proposing new stations which he hoped would link all the corners of the world. Emotionally and physically depleted, he contracted malaria in the Balkans and recurrent paroxysms of chills and fever plagued him for years.

The summer after Bea and Guglielmo parted "forever" she returned to Brownsea when Mrs. Van Raalte promised her solemnly that Marconi would not be told she was there. The lady, however, was intent on the match. Breaking her promise to Beatrice, she wrote Marconi assuring him of her affection and her grief at his rejection. His beloved would be on the island and she invited him to come back from abroad and stay at her house. Marconi gratefully and immediately accepted.

Once the initial shock of seeing Guglielmo again was over Bea, genuinely touched by his constancy and contrite at her lack of feeling, drifted into an easy comradeship with him. Together they sailed in the harbor and spent long afternoons rambling around the island. She found herself growing very fond of this

serious, intent man. On one of their walks she flung herself down in the warm purple heather where the moor overlooked the dancing sea and, sitting beside her, Guglielmo Marconi again asked Beatrice O'Brien to marry him.

She accepted on condition that Lilah approve.

Lilah was still in Dresden, a fact that could no longer be concealed. Marconi pestered Beatrice to write to her. It was two days before she was satisfied with her letter and sent it from Brownsea dated Wednesday, December 21, 1904. Written in a slanting, girlish hand, it is headed "Private." To "my darling Luzz" she confides that she had "... begun the letter one hundred times and torn everything up.... It's so serious I don't know how to break it to you. I'm not crazy; it's only this, I've settled the most serious thing in my life. Can you guess it—I am engaged to be married to Marconi ... on these conditions: only if he meets with your approval and when you come home in about three months' time. Only, only if you like him and, darling Luzz, you must try for my sake. I don't love him. I've told him so over and over again, he says he wants me anyhow and will make me love him. I do like him so much and enough to marry him.... I don't even know how Mamma or any of them will take it and as for you my own darling Luzz, if you don't like him a little, I shall die.... I told him this morning I was going to write and tell you, he realizes it depends on you. He says he is coming out to make love to you and bring you round but I am afraid he would fall in love with you and I don't think I'd like that now. But seriously he has got to go to Italy for ten days sometime before Christmas and I want him to go on the way to Dresden and see you. Do try to like him a little for my sake. I think he really does love me and would try to make me happy. We got engaged on the nineteenth and I never slept a wink till five in the morning. My feelings have been so extraordinary and wild I haven't been able to write, though I tried hard. He is not staying in the house now as he had to spend most of the day at the Haven just opposite on business. It will be a funny Christmas, won't it, my last most likely as a spinster ... and to think I never meant to marry! I had always arranged to be an old maid."

"Luzz" is granted permission to tell Dorrien but so far Bea herself has confided in no one except the elder Van Raaltes, now referred to by their first names, Charles and Florence. Her brother Barney is arriving the next day so she will have someone in the family to talk to. However, she admonishes her sister to keep her secret—above all from Mamma.

Barney arrived and the Van Raaltes left brother and sister alone after dinner before the fire in the sitting room. Confession of her engagement was made tremulously. Bea could not bear the thought of disapproval from any of her clan. Happily for her, Barney was delighted and urged her to tell her mother and her brother Lucius who, as head of the family, must give his consent before she could marry.

Just as soon as she arrived in London, Marconi bought Bea a tremendous engagement ring and went round to ask her mother for her hand. Lady Inchiquin did not grant it, that was up to the fourteenth Lord Inchiquin, nor was she encouraging. In fact she was dismayed. Her reaction bore a strange likeness to Mrs. Jameson's when, forty years earlier, her Annie determined to marry Giuseppe Marconi. One could not get away from it, famous though Guglielmo was, he was undeniably a foreigner and what, actually, did they know about him as a person?

Lucius was predictably in complete accord with Lady Inchiquin. Kindly but firmly, Bea was told to break her engagement and send back her glittering ring.

The letter she had written to her sister, Lilah, makes me think Bea was more in love with my father than she herself knew at the time. Certainly, in the classic tradition of such affairs, her family's opposition stiffened her desire to marry him. Even Lilah, she decided, could not deflect her. She was by nature loyal and her loyalty now transferred to her fiancé. Having plighted her troth, she would keep it with honor.

Beatrice arrived at this fiery decision alone. The man to whom she had promised herself had left for Rome. From there unsettling news drifted back to London. The current Inchiquin governess read in a continental newspaper that Marconi was being seen

constantly with Princess Giacinta Ruspoli. *Fräulein* promptly tattled to Lady Inchiquin. Worse yet, the following day a gossipy item had it that Marconi had shared a box at the opera with the lady and was engaged to her.

This outrageous behavior, just what you'd expect from a foreigner, according to Bea's mother, would cure her poor, foolish girl of her "infatuation." Bea was indeed hurt and upset, and more often in tears than not as the atmosphere grew tense in the house near Marble Arch. But herself faithful, she chose to endow her beloved with a like measure of fidelity and tried to defend him.

One afternoon Lady Inchiquin sent for her carriage and took Bea, protesting, to call on a strong-minded old aunt, Lady Metcalfe, whose opinions were often invoked in times of crisis. The women sat over their tea discussing the affair as though Beatrice, obviously reduced to the status of a naughty child, were not there.

"What can you be thinking of," the old lady scolded, "to let this child become engaged to a *foreigner?*" Beatrice sat huddled in misery.

Fortunately for Bea, who was quite distraught by now, Guglielmo, too, read the dispatch that claimed he was engaged and, dropping his business and the proposed trip to Dresden, caught the next train for London. His first move after he got there was to calm and reassure her—no one else had been able to do it. As soon as he had her comforted and smiling he turned his attack on her family. The speed with which he had come to her side impressed them and when he added his charm and reasonableness (to say nothing of the elegance which spoke for the fact that he was a "gentleman") they were unable to hold out any longer. The O'Briens melted and the engagement was announced in the Court Circular.

The capitulation is certainly not as astounding as it seemed to unsophisticated Bea, who was quite dizzied by the sudden change in their attitudes. Marconi was accepted, even lionized, by society, the darling of duchesses in Mayfair, a familiar figure in the

great houses along Fifth Avenue, commanded to dine at the Quirinal, and followed by the press wherever he went. Though marriage to an eldest—preferably titled—son was every mother's dream for her daughters, Marconi was internationally considered a brilliant second-best. However agonizing his worries about company capital, in terms of personal income he was comfortably well off, was believed to be rich, and expected to become richer. For some years now women had thrown themselves (or their daughters) at his head and for the rest of his life they went on throwing themselves at him.

Yet he had chosen this girl who gave him no alternative but to try to fuse with the one segment of a society whose aims were fundamentally different from his own, which had slight understanding of his work or his nature and a British distrust amounting to disdain for his Italian provincial background. If social standing had anything whatever to do with his selection of Beatrice O'Brien for his wife, it was in the uncomplicated sense that all he asked of life was the best of everything.

Beatrice was the best and he wooed her and hers with irresistible concentration. After their first differences were past, he made great friends with Lady Inchiquin, whom he found excellent company as he got to know her, and took to calling on her regularly. Bea, thereafter, caused him sharper torment than her family did. She was a born flirt and, innocent as a baby, incapable of suppressing her adorable, flashing smile at every male who came near her. Marconi was assaulted by violent jealousy, an Italianate sensibility she never understood, at her casual, laughing encounters with other men.

Lilah, who seemed so worldly wise to Bea, though she was a year younger, arrived home from Germany and though she seemed so adult, she says she was almost too shy to look up at the celebrated man who was about to marry Bea. At the dinner table the first evening they met "I noticed his peculiar, capable hands, and his rather sullen expression which would light up all at once in a wreath of smiles and shyly poke fun at people."

To Lilah, Beatrice had written "that nothing on earth could

induce her to have a big wedding." She had one, anyway. Her idea that she and Marconi "would just walk into a church with her mother, Lilah, and Barney and be married," was swept aside when the Inchiquins took over. Once they had acceded to the marriage, they proposed to surround it with every solemnity to make it binding, and to proclaim the family's solidarity.

The wedding was to be in St. George's, Hanover Square, then as now the most fashionable church in London. It is unlikely that consent would ever have been forthcoming if Marconi had been both foreign and a Roman Catholic. Catholics to these Irish Anglicans were devils incarnate. Brother Lucius would give the bride away and the Italian Ambassador was invited.

Even Lady Metcalfe subsided and made the *amende honorable* in the form of a complete, rather staggering trousseau and a parure of diamonds and opals which, though she later bitterly regretted it, Bea pawned because she was superstitious and thought opals unlucky. Presents poured in: silver, jewels, linens and laces, plates enough for banquets, and glasses enough for routs. Popoff sent a sealskin coat and a silver samovar from Russia.

Marconi gave his bride two gifts. The first was a coronet of Brazilian diamonds suggested, Beatrice still fears, by her mother. "Not," she adds quickly in his defense when she tells of it, "that he didn't want to do it. He was frightfully generous and loved buying it for me." The second was a bicycle. "That," she smiles, "was really his own idea."

They were married on March 16, 1905. The Inchiquin coach had long since been given up, so Viscount Coke loaned Beatrice and Lucius his smartest carriage for the drive to St. George's. When they arrived, they were appalled to find that besides royalty and other invited guests, the public had chosen to attend. On the billboards that day headlines appeared: MARCONI TO WED DAUGHTER OF IRISH PEER. Hanover Square was mobbed.

No amount of formality could make this quite the wedding it would have been if Beatrice O'Brien had married a dashing young earl. Inescapably, Marconi was an object of world regard. Two days before the sixteenth, a grubby and illiterate letter was

found among the crested stationery of letters that inundated the console in the front hall saying that the bridegroom would be assassinated as he reached the church—by whom and why was not specified. Beatrice's brother-in-law, Sir Frederick Harvey-Bathurst, her sister Moira's husband, was stationed at the portals with detectives to turn back anyone who looked suspicious. No bombs exploded, no shots were fired, but in his anxiety Lucius got Bea to the church a half hour ahead of time, much to her chagrin since Marconi had not yet arrived.

Marconi had a passion for privacy and the Inchiquins desired to exclude strangers from their affairs. Both were affronted by the crowds and by a distasteful inquiry as to whether a film might be made of the ceremony.

On her brother's arm Beatrice came up the aisle, her delightful hair hidden under a veil of heavy cream lace, her enchanting figure swathed in satin over which more lace was draped and swirled, a great train fanning out behind her. She was attended by four bridesmaids, Marjorie Coke, Maude Lyttleton, Eve Trefusis and the beloved Lilah, who devotedly wept copious tears all during the service at "losing" her sister. The bridesmaids' costumes were pure Edwardian: long, billowing dresses of cream-colored bengaline and garden-party-sized Parma violet hats. They carried bouquets of Parma violets.

The invited guests and wedding party struggled to a large reception at Lady Inchiquin's house where a monumental cake was cut and champagne served, after which the young couple retired to a "boudoir" to wait till their train left, late that night, for Ireland. Lucius had offered them Dromoland for their honeymoon. As they sat, wearily holding hands, the inevitable small girl cousin spied on them, and later confessed that she was disappointed to find them in their going-away clothes, looking just as they ordinarily did.

As the boat train pulled out of the station the following morning at Kingston, Marconi called Bea's attention to two large crows which he solemnly told her were man and wife. The male had a succulent piece of bacon in his beak which he was devouring with no thought of his spouse. "What if, after a few years of

marriage, I treat you like that?" he asked teasingly. "What will you do?"

He sensed her need for raillery. This was her first return to Dromoland since her father's death and she was apprehensive about marriage—not marriage to him but marriage itself. Like most girls of her era she was utterly innocent.

It was still cold and dark when the train stopped but they dutifully sent off a telegram:

To Ellen, Lady Inchiquin: Arrived safe in lovely weather. So happy.

Signed Bea and Marky.

("Marky" was Lady Inchiquin's invention since she got terribly tangled in the *g*s of Guglielmo. Lilah sternly labeled the nickname undignified, unintelligent, and irrelevant.)

Being at Dromoland may have made the first days hard for both Marky and Bea. As Lilah said later, "Much as she enjoyed going to her old house for their honeymoon and showing him all the old haunts, making him known to the old people, the change and the quiet was enormous. Previously the castle had never been empty of joyous voices and the laughter of the brothers and sisters, sometimes all under the same roof during vacations from schools, colleges, regiments, etc., beside visitors and parties for shooting. At family gatherings toasts were drunk in Moët Chandon from a large antique silver loving cup like a church chalice. One brother went to London every January, bringing back all the *Gaiety* music which his sisters had to play. Three brothers played the banjo, one the mandolin and we improvised choruses on the lake or around the fireside, deluged with the tobacco fumes from their pipes."

Now Dromoland was lonely and a little sad. The Inchiquin glories, like the Inchiquin family gatherings, were things of the past. Bea was trying to get used to an entirely new situation in the company of a brand new and strange husband.

There was no Lilah to confide in. Only Mrs. Simpson, housekeeper for fifty-one years who must have comforted many a

bride in the past, was there to help this one. When she was summoned she came in saying comfortably, "I was waiting for you to ring."

For his part, Marconi stamped out of the house when things went awry, and walked off his temper and distress in the woods, alone.

Appearances were, of course, preserved. Bea wrote her mother:

Dromoland Castle
Newmarket-on-Fergus
County Clare

Saturday, 18 March, 1905

Dearest Mamma:

Just a line to tell you we arrived here all right yesterday and to thank you *ever* so much for your dear letter. I was delighted to have a line from you. We are both so happy and Dromoland's just the same as ever not changed one little bit. Except that the house seems so deadly quiet, one can't help feeling a bit lonely. We have been given no. 3 & 4 it's so strange being in the Visitor's part of the house. We didn't have such a very tiring journey and today I feel as if we had never been traveling at all. The crossing was smooth as glass. I think it was better coming straight through, don't you think. The wedding went off very well, don't you think. It was too, too good of you taking all the trouble you did over it. We are both grateful and Marky sends his love and says he quite realizes how lucky he is!

So that's all right isn't it! I can't get used a bit to being called Ma'am, it's too funny. Everyone has been too kind here and simply delighted to see us again. We were met at the station by old Mike and Mrs. Simpson was at the top of the stairs wildly pleased and excited at seeing us. We have had more than 350 telegrams of congratulations from all over the world. I can't write a longer letter now as the post is just going. Goodby dearest Mamma with fondest love from us both and ever so many thanks for all you've done for us.

Ever your loving Bea.

Excuse this untidy and hurried line but I've been too dead beat to write before!

They had only a week for their Dromoland honeymoon. Guglielmo had to cut the stay short because of business in London. By the time their boat left Kingston they had drawn together. Perhaps sharing her memories with him helped her to surrender the rest of her life to him. By the time their train left Kingston the girl whose cry "I don't love him" had not stopped her from marrying him was deeply in love with her husband.

CHAPTER THREE

The year of his marriage, *Vanity Fair* published a caricature of Marconi by Spy and a caricature in words called "Wires without Wires," so lively (though in some ways so inaccurate) that I cherish it:

> The true inventor labours in an attic, lives chiefly upon buns, sells his watch to obtain chemicals, and finally, after desperate privation, succeeds in making a gigantic fortune for other people. Guglielmo Marconi invented in comfort, retained any small articles of jewelry in his possession, and never starved for more than five hours at a time. Therefore he cannot expect our sympathy as an inventor, though he excites our wonder as an electrician.
>
> He is a quiet man with a slow, deliberate manner of speech, and a shape of head which suggests an unusual brain. He has Irish blood in his veins, for his maternal grandfather, Andrew Jameson, married a daughter to a Marconi of Bologna, from which union was born Guglielmo. Guglielmo, I may mention, is the Italian for Bill.
>
> Bill was educated at Leghorn under Professor Rosa, and afterward at Bologna University. He first attempted to send wires without wires upon his father's land to the farm of neighbors.

Chemistry was his earliest study, but from it to electricity was but a short step. From Italy he came to England, testing his instruments between Penarth and Weston. Returning home again, he obtained the loan of an Italian cruiser, and continued his experiments with success.

What has been the result the world knows. His system is used exclusively at Lloyd's and in the British and Italian Navies. It had made the Atlantic still less endurable for tired brains by providing liners with a daily paper. He has alarmed the Chinese with his devices at Pekin and Tien-Tsin, forcing them to compose special prayers against foreign devils and all their works. He has been the cause of a petition from the Cornish fisherfolk, who suggested that Government should put him down before his electrical sparks ruined the weather. Lastly, to fill the cup of his SINS, he has sent messages across the Atlantic, and created amongst shareholders in cable companies a feeling which resembles the personal uncertainty of chickens under a hawk....

He is a hard worker, displaying the greatest resolution before unexpected difficulties. He rides, cycles, motors. Of music he is a sincere admirer. Being half an Irishman, his lack of humor is prodigious.

Back in London Marconi, purely from habit, returned to the small hotel where he had always stayed to be near his office. Soon he and his bride moved out and over to the glittering Carlton, the most splendid hostelry in the city. Bea had never stayed in a hotel before in her life, and she was like a child at a circus.

The first time she descended alone into the great lobby and went out for a short walk, it seemed a happy adventure. When she got back, her husband met her at the door of their room, storming that she was henceforth to tell him before she left exactly how long she would be gone, and street by street where she planned to be. Devoid of jealousy or fear, Bea could not believe her ears, but Guglielmo meant every word he said. If she dallied he was apt to rush out to find her, wild with worry, and if she wandered off her appointed course she was likely to be severely scolded. It might be flattering to be so cherished, but she felt baffled and confined.

The state of his business, when Marconi found time to get to

Finch Lane, was calculated to exacerbate his nerves. Everything possible was being done to intensify the power of the transatlantic stations. Poldhu was already out of date and a 300-watt installation was being built to supersede it at Clifden, Ireland. Yet so far transmission was dependable for only 1,200 miles by day and 1,700 by night.

To jack up the shaky credit of the Marconi Company and silence the jeers of the cable companies, a painful decision had to be taken. Should the dream of direct wireless be abandoned in favor of a world relay system? It would be perhaps prohibitively expensive. Or should they give up all thought of long-distance wireless except at sea and content themselves with contracts like the one Cunard had just signed guaranteeing ten pounds a day for every hundred words each ship received?

Under the circumstances Marconi wanted to inspect the Table Head station to see if transatlantic wireless really looked hopeless before an ultimate policy was decided on. Bea and Guglielmo sailed for America on the *Campania.*

For Bea it was a voyage of discovery. As they settled down for the crossing she was astonished to see my father pull clock after clock out of his luggage and hang them on the walls. He confessed that he could never get past a store which had one in the window without going in and buying it. Time fascinated him and he gleefully set his timepieces to tell him the hour in Singapore and Chicago, Tokyo and Lima, Johannesburg and Rangoon. His preoccupation was meaningless to Bea. When he indulged his passion by giving her more wrist watches than her jewel box would hold, she left them all unwound to be spared their multiple ticking.

As the ship moved out to the open sea, Marconi immured himself in its wireless office (it had been using the Marconi system since 1901) to oversee the *Cunard Bulletin.* Pretty, friendly Bea was left to amuse herself and to share her excitement over her trip and being the wife of a famous man with strangers. Everyone took to her, but when her husband did emerge from the wireless cabin and found her talking to the other passengers, he led her stonily to their stateroom and lectured her about flirting.

Bea herself was extravagant, now that she had money, and thoroughly impractical, but she thought of her husband as a monument of organization and meticulousness. When she caught him surreptitiously shoving his dirty socks out of the porthole, she was aghast. With what bravado he could muster, Marconi explained that it was easier to buy new ones than to wait for the laundry.

Taking him in hand where his mother had left off, his new wife began her chores by rescuing the next pair of socks from the wastebasket where Marconi had thrown them. He was unimpressed by the fact that his bride was able to darn divinely. Actually, before she was married, she says, she would have had no clothes if she had not been able to make her own and felt lucky that the styles of the moment favored flowered muslin sheaths with sashes and fichus. He took her sewing for granted, as well as the fact that she began to pack and unpack for him and perform all the other wifely duties he had left to his mother or left undone. Being in love, she enjoyed serving him.

She was also patient when Guglielmo, possibly to keep her under his eye, taught her the Morse code. In spite of her lack of interest, she concentrated on her lessons and became sufficiently proficient to be able to grasp the substance of any message before she handed it to him.

If Morse was a bore, another course of lessons Bea took on shipboard struck her as enthralling. Marconi groomed her to meet reporters, to be friendly at the same time she was discreetly silent to their questions. It seemed like a game until she was overwhelmed by the men who crowded aboard from a tug in the lower harbor. Having followed her instructions flawlessly and held her tongue despite competent needling, she was utterly flabbergasted to read in the newspapers what Signora Marconi had "said."

Still, nothing could tarnish the young couple's pleasure in New York, and the round of parties and dinners. At Oyster Bay, where they lunched with Theodore Roosevelt, his daughter, Alice Roosevelt Longworth, later told me, they were glowing with good looks and happiness. Bea took on a new job at this time. She

saw that Guglielmo was incapable of answering the letters that piled up and asked if she might not handle his nontechnical correspondence. In her slanting hand she wrote endless letters and Marconi's gratitude was heartfelt.

The initiation to America was glamorous, but within a few days they left for Canada. At Glace Bay, where the snow lay deep, the silence was so intense it made Bea's ears ring. They went at once to live with the Vyvyans in their house on the station. This, I am sure, was harder on the young Vyvyans than on the young Marconis. Jane Vyvyan, daughter of a civil servant, had grown up in India and was now struggling without trained help to keep house and care for that baby whose birth had been announced to the London *Times* in one of the first transoceanic wireless dispatches. She was not certain how the daughter of a peer was going to behave under fairly primitive circumstances, but she was gloomily prepared for the worst.

In the house they shared it was essential that the two women get on. To Beatrice's eye, accustomed to Dromoland and London, it looked cramped and indeed, as it had only two bedrooms, a minute bath, living room, dining room and kitchen, there was no room for them to keep out of each other's way. Marconi, of course, disappeared immediately into his world of men and machines, easy at the thought that Bea was not alone and that she was chaperoned.

Beatrice had no idea what was expected of her. Jane rebuffed her fumbling efforts to pitch in and do her share. That she could not cook she well knew—Lilah and she had realized it at a tragic moment—but she adored babies and was as handy with them as any nanny. However, no offer she made of help was accepted by Mrs. Vyvyan and Bea thought she would never succeed in thawing her icy unfriendliness.

For a long time Bea kept her troubles to herself but at last, in a flood of tears, she told her Marky about them. He was furious and all for having it out with the Vyvyans, which Bea had the wit to prevent, knowing it would be disastrous if anything came between him and his engineer. Instead she nerved herself to ask Mrs. Vyvyan bluntly what was the matter. That lady's reserve

broke down and, while both girls wept, Jane admitted that she had been trying to forestall any superiority on Beatrice's part by getting her own in first. After they made up and dried their tears, they became good friends and life was easier at Table Head.

The routine of her days was better after that but Beatrice was often dispirited at life in the fenced-in compound of the station. When important work was going forward she was permitted to go to the receiving shack, where Marconi could supervise her while he went ahead with what he had to do. There she sat for hours with the engineers, listening for signals and delighting when they came through though she never fully grasped the significance of the victories she witnessed.

Beatrice suffered from being restricted to a world ringed with barbed wire. They had not brought their bicycles. At Glace Bay there were no roads to ride. There were not even negotiable paths, just spruce and fir saplings hacked down and laid to form rough walkways. Going along them was cumbersome and when Bea grew restless beyond bearing, she took to walking along the railroad tracks that ran in to Sydney.

On a fine breezy afternoon, Beatrice tried to get all the way to town, going on and on, but it was farther than she realized. Nearly there, she saw lights twinkling and turned back, knowing it would soon be blind dark and she would be late for dinner. She tried to hurry but her long skirts hindered her and night had closed down. There seemed to be a procession of engines running up and down so, tired of scurrying off the tracks, she took to the bottom of the embankment, though it was walled with dark trees.

Finally, exhausted but not frightened (I have never seen her frightened) at eight-thirty she stumbled in through the gate. The men at the station were in a frenzy of fear, knowing better than she what a wild lot the mine laborers were. The engines she had been avoiding had been sent to search for her. Shaking with terror, Marconi gave her a scolding she well deserved, and never forgot.

Marconi was sorrowful at leaving Bea in the wilderness but he had to go back to Europe to tell his directors what he had

decided. He was convinced that, somehow, the Marconi Company must hold on. Exceptionally fine reception during his return trip aboard the *Campania,* at distances greater than had previously been achieved at sea, helped to fix his resolve. While he made efforts to raise money in England and Italy the days lengthened out and it was three months before he reached Canada again. Bea, lonely and ill with a severe attack of jaundice, was more than ready to leave for home.

To her dismay, "home" now turned out to be Poldhu, which she found almost as dreary as Glace Bay. Again her life followed a pattern of walks and waiting. The hotel was bare and comfortless, the food dreadful. In addition Bea was pregnant and felt wretched.

"I was almost too young to realize the strain he was under during the first year of our marriage," she said long afterward. "In view of my condition he kept his increasingly pressing financial difficulties from me. He was dreadfully overworked yet he couldn't allow himself to neglect his experiments."

To keep his plants running and meet his payrolls, Marconi sank his entire capital and what money he had made from the beginning into the Marconi Company. Unaware of this, Beatrice decided to move to London where Lady Inchiquin rented them a house at 34 Charles Street, off Berkeley Square. This Mayfair house of ancient, smoky brick with cream-colored trim bore little relation to the tidy, middle-class dwellings Marconi's mother had frequented in Bayswater. Here Beatrice was cosseted, Lilah looking after her while Marconi was tied to Cornwall almost uninterruptedly. He came up to London as often as he could but the trip took eleven hours, he had little time, and he was more and more plagued by malaria.

In February, 1906, a daughter was born to the Marconis. They called her Lucia. She lived only a few weeks, then died of an undiagnosed infection. My father, so basically undomestic, adored children and had looked forward to the birth of his first with tenderness and pride. Now he was shattered and had, in addition, the ghastly experience of driving around London in a taxi, trying

to find a cemetery that would bury his baby. She had not been baptized.

Yet nothing relieved him of the inexorable need to go back to work. While Beatrice made a slow recovery, lovingly tended by Lilah who stayed at her bedside, he persevered in Cornwall.

The time came when Beatrice had to be told that they were not rich. She received the news in good heart—it could not alter her feelings toward Guglielmo, rather it bound them closer. She took it upon herself to make what economies she could and to give her time and help.

Trouble seemed to stalk them despite everything she did in this second year of their marriage. The bouts of malaria intensified and raging temperatures incapacitated Marconi for weeks at a time. Not long after the death of Lucia, he collapsed completely and was in bed in the Charles Street house for three months.

Father was a difficult patient. Before he would touch any medicine he analyzed the prescription and he was outraged when doctors and nurses gave him candy-coated diagnoses, as well as candy-coated pills, both considered proper in England at that time. Used to the franker, friendlier ways of Italian physicians he would burst out to his wife: "They take me for an *idiot!*"

When he could bear their "nonsense" no more and Bea was on her feet, the Marconis sent their day and night nurses packing and he was peaceful at last with no one but his darling to look after him. They called in Dr. Tallarico of the Italian Hospital (to which Marconi had turned over his salary as a midshipman without duties) and he proved to be wise and calming.

The bedridden Marconi took a morbid delight in collecting funeral advertisements and propping them up on a table beside him. To Bea, not fully recovered from the shock of her child's death and aware how sick her husband was, this was not funny. She had no recourse but to conclude fatalistically that she had a thoroughly weird patient and husband to deal with.

One day after he had begun to mend, Beatrice took a prescription to the chemist's so she could get a breath of air. When she got back she found Marconi, red in the face, standing on his head

and thought, for one startled moment, that he had lost his mind. Persuaded to descend from his perilous position, he explained that he had bitten his thermometer and could think of no better way to get rid of the quicksilver he had swallowed.

He recovered, nonetheless, and as soon as he was up and about, the Marconis sailed on R.M.S. *Empress of Ireland* for Nova Scotia. With them were Bea's sister, Eileen, and brother, Barney, now an engineer with the company, whom Guglielmo had invited to give Bea pleasure.

Eileen carried her camera with her and took innumerable photographs of Marconi posing with the captain and, again, with Bea, whose coat just clears the deck and whose brimmed hat is winged, like Mercury's. The sea air made him feel immeasurably better and he worked on the crossing but his nerves were still unreliable and he worried all the way over at the speed the captain maintained. Twice in the middle of the night he woke the other three to say, distractedly, it was sheer madness for the captain to risk everyone's life by going full speed in fog through an iceberg zone just to arrive on schedule.

They did arrive, for all that, and in Canada I see them again as Eileen saw them. Here is the house and it strikes an incongruous note in the family album among pictures of St. Moritz and Grifone, Eaglehurst and Ramsay Abbey, Gordon Castle, Rowton Castle, and the royal palace at Stockholm. It is wooden, Victorian and two stories high, with a gabled attic and a bay window on either side of the veranda. White birches are the sole grace note on either side of the stiff straight front path though some homesick hand started to lay out a polite, geometrical flower garden before giving up. Here is Bea in a white shirtwaist dress with a long, full skirt and a wide belt and as she stands on the stiff path, wet from a shower, she is reflected like a pretty white ghost. There is a merry family group on the porch, set off by a tasteful selection of potted palms. Then there is Father, taken during an excursion to Father Point, smiling self-consciously from a tattered carriage with a fold-down top behind an ancient, discouraged horse.

Now that it was summer they found that there was abundant

After he went to England, Father became rather a dandy, but even London tailoring failed to disguise his youth. Reporters said when he arrived in New York the first time that he "looked the student," with dreamy eyes.

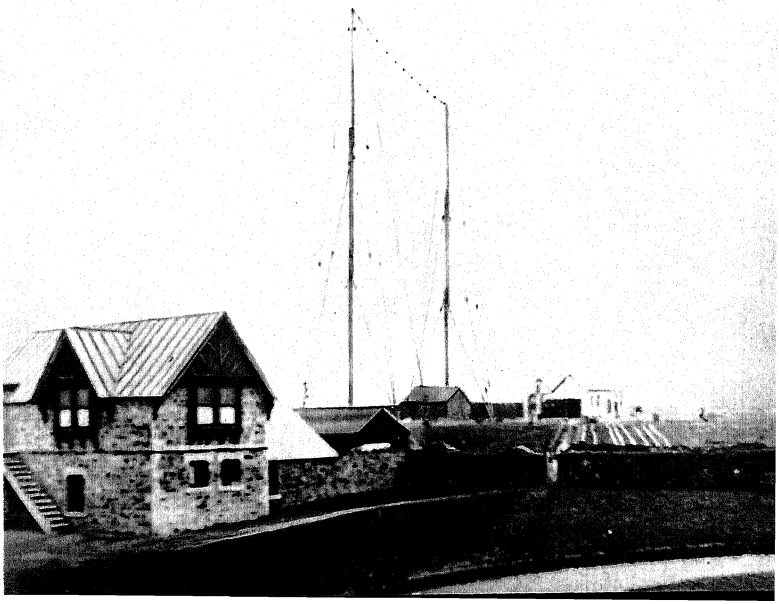
In Bologna Annie Jameson Marconi sat for a studio portrait with her two sons, Guglielmo, left, and Alfonso, right.

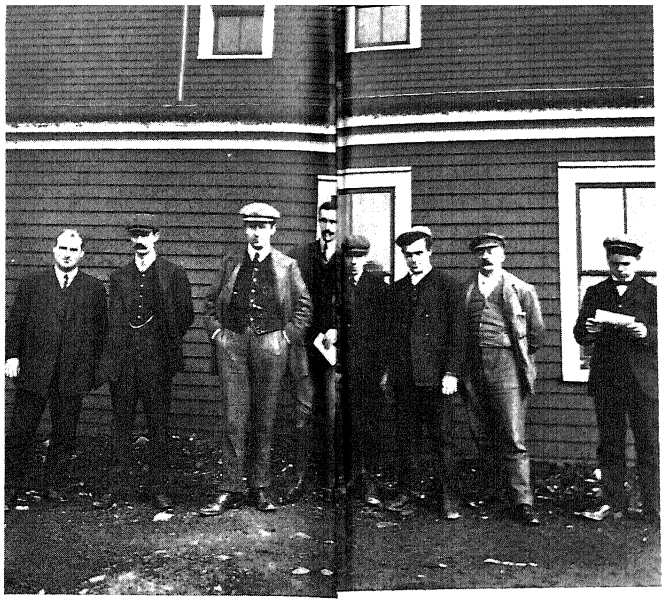
Guglielmo in 1902 acquired an impressive fur-lined greatcoat to protect himself against the cold of Glace Bay. As boss of a crew of men all his seniors he affected a stern expression and clipped mustache in hopes that they would make him seem older. He was just twenty-eight.

The Marconi family snapped in the park of Villa Grifone shortly before Annie and Guglielmo (center) left for England. His father, Giuseppe, is on the left, Alfonso behind the bench.

(Above) *The mysterious black box Father brought from Italy, on the right, contained coherer, tapper, and relay. Copper strips acted as an aerial. Right oscillator is on the left. The year was 1896; the inventor, twenty-two years old.* (Below) *Shore-to-ship experiments conducted in the Gulf of Spezia during Marconi's first homecoming, though not an unqualified success, led to later solutions of scientific problems. Father, seated beside his receiving apparatus in a Navy launch, had been feted by his King and Queen and fellow citizens.*

(Above) *Marconi, on the left, noted in December, 1901, at Cape Spear: "On Tuesday (the tenth) we flew a kite with 600 feet of aerial as a preliminary test . . . and on Thursday morning, in spite of a gusty gale we managed to fly a kite up 40 feet. The critical moment had come, for which the way had been prepared for six years."* (Below) *Two 170-foot masts, supporting a fan-shaped aerial, replaced a ring of twenty poles at Poldhu after they blew down in September, 1901. From this barren coast the first transatlantic message was sent to Newfoundland, on December 12.*



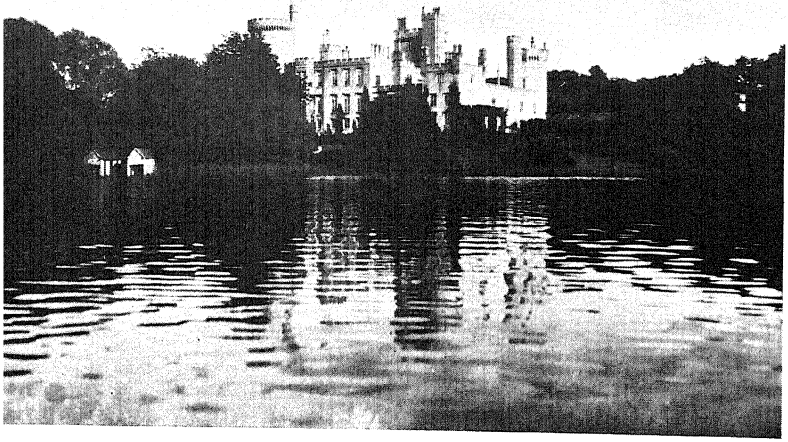


(Above, left) *Between Kemp and Paget Father sat on the hamper which carried kites and balloons from England to the barracks on Signal Hill for a historic photograph with a kite as backdrop.*

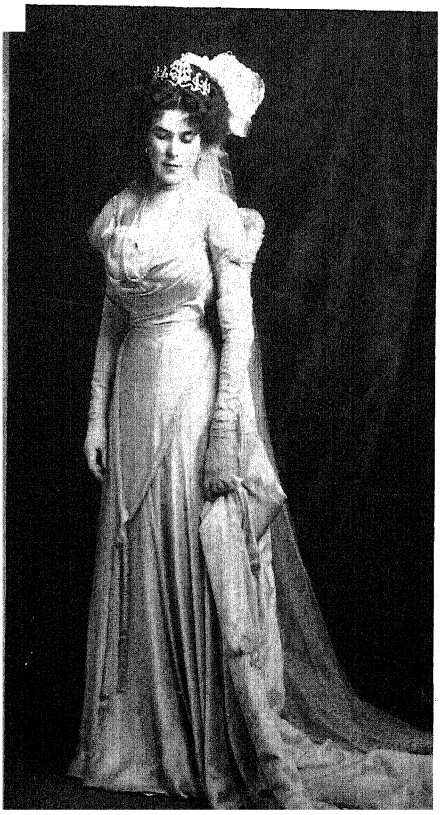
(Above, center) *Hands in the pockets of his plaid suit, Marconi the boss stands in front of Vyvyan as the staff of Glace Bay lines up for a photographer.*

(Above) *At the time I was born in London, Father was on his way home from America, where this picture had been taken of him in the receiving room at Glace Bay.*

(Below, left) *Shortly after the triumph of 1901 the Biograph Company made the first film of wireless. In one scene Father examined tape while Kemp manned the tapper. The room was happily supplied with a radiator.*



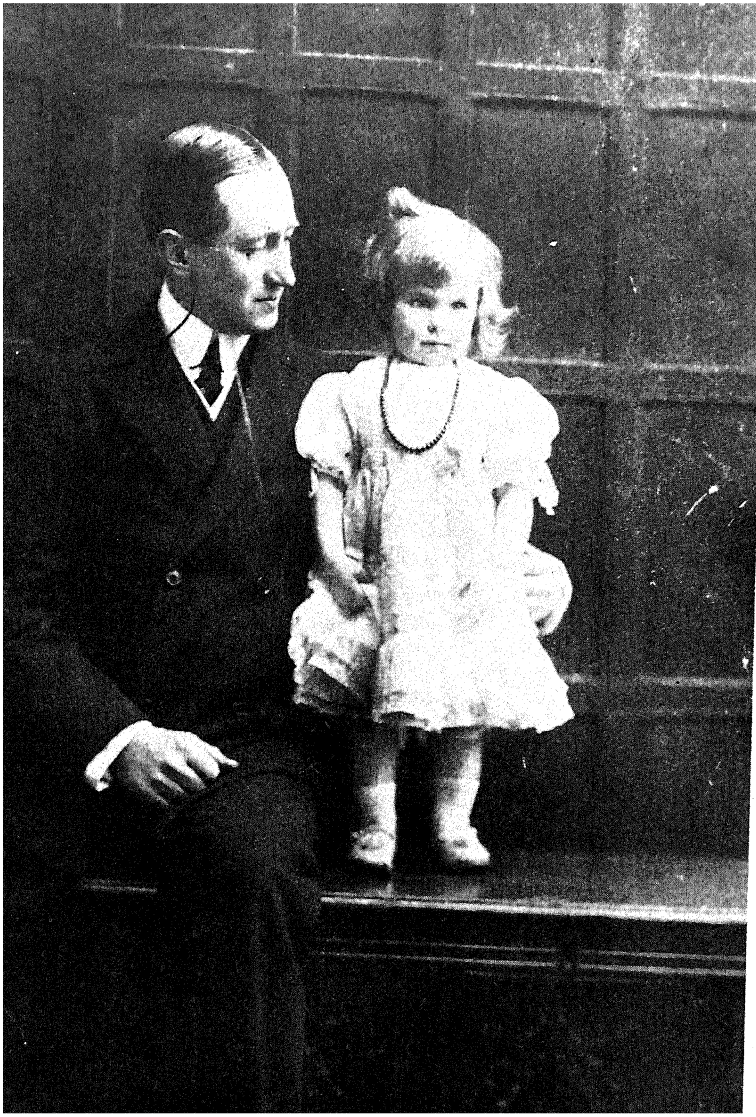
LANGFIER, LTD.—LONDON



(Above) *Dromoland, seat of the Inchiquin-O'Briens in County Clare, where my mother, Beatrice O'Brien, was born and where my parents honeymooned.*

(Left) *Aunt Lilah wrote that Mother's wonderful figure and straight back were a joy to dressmakers. Beatrice O'Brien was present at court in a Marguerite satin gown, regulation ostrich feathers, and a borrowed tiara.*

(Right) *Beatrice O'Brien Marconi, my lovely Irish mother, holds her son Giulio in her arms while I stand precariously beside her on a bench at Grifone. One of Father's long succession of motorcars is parked in the driveway.*

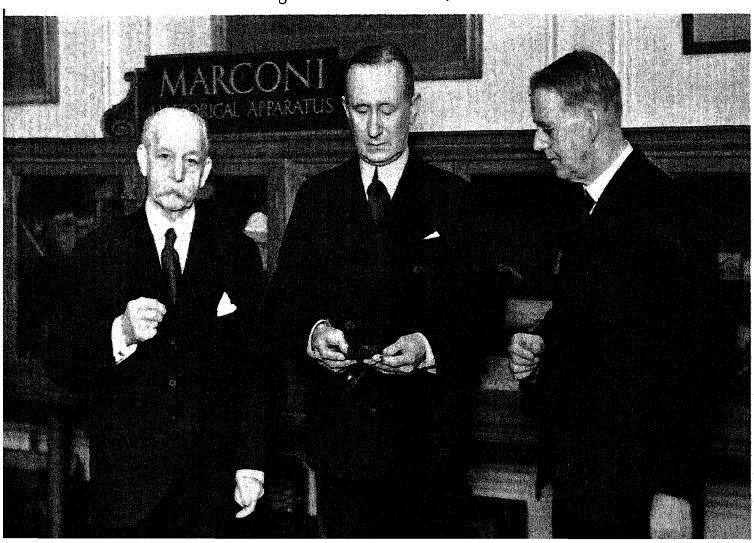


Father and I pose for a portrait in London.

(Above, left) *In matching hats and high-buttoned boots, Giulio and I were corralled by our father in front of Eaglehurst.* (Above, right) *As a toddler I loved to explore near the Villa.* (Below, left) *Villa Grifone was part of my childhood, as it had been of Father's, and he jauntily played driver with me as pony on a summer day before World War I.* (Below, right) *My brother Giulio at twenty-one when he was serving in the Italian Navy.*

B. MINIATI—LIVORNO

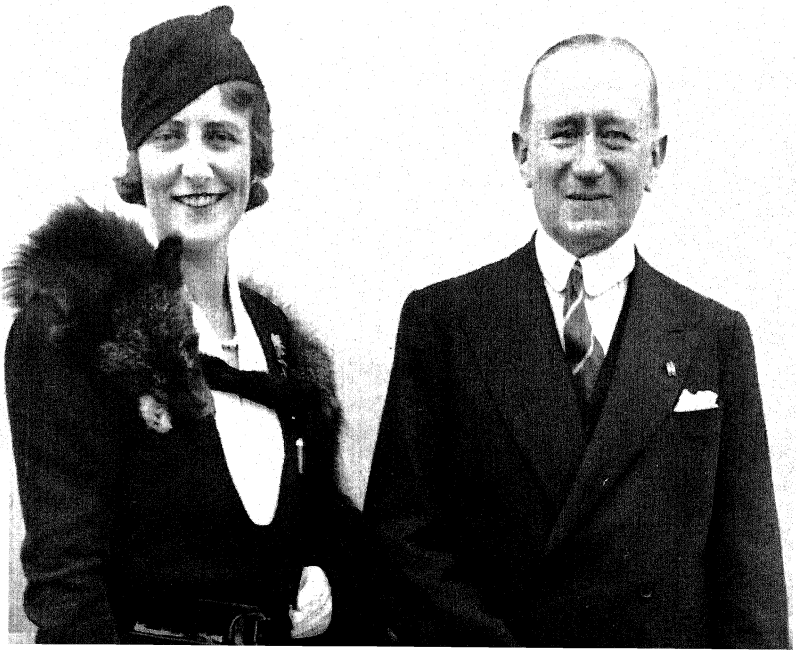
(Above) *Aboard the* Elettra *we children were seldom invited into the wireless cabin where Father worked and experimented every day. This is how it looked the year after he bought and refitted the ship to be a seagoing laboratory.* (Below) *Kemp's red hair and mustache turned white, Paget's mustache disappeared and his hair thinned, but these men were still at Father's side for the gala anniversary of the first transatlantic message in Marconi House, London.*



Warm and close friendship is reflected in the faces of my father and Cardinal Pacelli, later Pope Pius XII, as they talk at Civitavecchio in July, 1930. They met for the last time two days before Father's death.

Father and his second wife, Cristina, arriving in New York on September 28, 1933, on what developed into a round-the-world trip.

WIDE WORLD



This Spy cartoon appeared in Vanity Fair *in 1905 accompanied by a tongue-in-cheek biography, "Wires without Wires." Marconi was cited as "A quiet man with slow deliberate way of speech and a shape of head which suggests an unusual brain."*

trout fishing close to the house and another stream so sporting that the men made a seventeen-mile trip there to kill salmon. On other days they shot ducks and geese. However, Marconi had an un-English, un-American disinterest in fishing and shooting as ends in themselves. Bea loved the blood sports only for the fun of going along with the men. In Canada, her husband decided it was unsuitable for her to accompany them on their outings.

There were few enough outings for him. Sometimes in the evening he would play the upright piano in the small living room Jane Vyvyan had made cozy with English chintzes, and the household would gather round and listen or sing. There cannot have been many such evenings. For the most part he slept, like Edison, only a few hours each night, getting up at three and waking his staff at four-thirty while reception was still good.

Years later, speaking over BBC, Eileen O'Brien recalled a crucial part of that time: "An electric storm of great severity broke over our bungalow and station, so much so that Marconi again came to tell us that he could hear nothing, and seemed in despair. My sister and I tried to encourage him, and I asked him to return in about three quarters of an hour to tell us of his success and his face revealed this. No words can describe his joy and would we come and listen at once? We all went to the station and in a few moments I heard what sounded like buzzing, like a gnat in the earphones but the engineers knew its meaning.

"On this famous day, July 15, 1907, the chief engineer, Mr. P. J. Woodward, wrote down for me on two scraps of paper (Marconigrams were not then in being) these two original messages which are now in the Science Museum, South Kensington, with other relics of Marconi's work.

M Station, Glace Bay, N.S., July 15, 1907
Latest News Bulletin
from Poldhu Station—Cornwall
One hundred strikers cycled into Pretoria to demand the passing of the Arbitration Bill. The Premier refused—the deputation withdrew repudiating all responsibility of possible bloodshed.

The second message reads:

M Station, Glace Bay, N.S., July 15, 1907
Telegram received from Poldhu Station, Cornwall
London to Mason
Steamship La Provence
Love to all, Jack in particular
Orchie.

One horrifying incident occurred on this trip. Barney went too close to the electrical switches and though he did not touch them —he would have been killed instantly—he was thrown to the ground and received burns on one arm. It is a measure of the strength the power had now reached.

R. N. Vyvyan recorded in his book, *Wireless over Thirty Years:* "After satisfactory tests had been effected over several weeks, both by day and night, the Glace Bay and Clifden stations were opened for a limited public telegraph service in October, 1907, when 10,000 words were exchanged, and an unlimited service at the beginning of February, 1908, four years after the first message had been sent across the ocean from Glace Bay, and after many difficulties and disappointments. Only those who worked with Marconi throughout these four years can realize the wonderful courage he showed under frequent disappointments, the extraordinary fertility of his mind in inventing new methods to displace others found faulty and his willingness to work, often sixteen hours a day at a time when any interesting experiment was being tested. At the same time the Directors of the Marconi Company showed wonderful confidence in Marconi, and courage in continuing to vote the large sums necessary from year to year until final success was guaranteed."

The outward and visible sign of the final success at Glace Bay was four flags that flew from the four towers: one for Italy, one for the United States, one for Great Britain, and one for Canada.

CHAPTER FOUR

At the end of that summer the Marconis gave up the Charles Street house, so full of sad memories, and took Sunborne, Sir Frederick Harvey-Bathurst's place in Hampshire. Marconi hoped to set up a small laboratory there but never got round to it—London, Poldhu, Poole, and Clifden demanded most of his time. He did, however, take Bea on her first trip to Italy, to Bologna where she was welcomed at Villa Grifone by her mother-in-law. Then they went on to Rome.

The capital city captured her at once, though she was too timid to venture on the street alone in such foreign surroundings. Hanging out of a window in her hotel room that overlooked the Corso, she listened for hours on end to the talking and shouting of the cab drivers below. At night Bea begged Guglielmo to take her into the crowds making their evening *passeggiata,* but he never would because in the street he was invariably recognized and mobbed. Instead they slipped out by a side door and met his friends, fast becoming hers, at small restaurants for supper.

After they got back to England, Bea made a habit of joining her husband whenever he was in London. The Ritz had just opened and they stayed there now. From her window one rainy day she was rocked with laughter to see Marconi crossing Pic-

cadilly under her bright red parasol which he had picked up instead of his umbrella, blissfully unaware that everyone around him was grinning.

Night after night they went to musical comedies and variety shows at the old Alhambra or the Palace or to the Drury Lane, where *The Whip* was playing. Marconi sat through them so lost in his own thoughts that he never knew or cared if it was the first or (as Bea claimed) the eighth time he was seeing the same show. The lights and music and gaiety relaxed him and when his wife got bored to death she would pull her knitting out of her evening bag and settle down with it in the back of the box. Afterward they walked home. Ever since his first stroll in London, the day he took his original invention to the Post Office, he had been enchanted by the cries of the street vendors and, with his uncanny ear, he mimicked them wonderfully well.

The peregrinations around England went on but since Bea was pregnant again he left her in a house in upper George Street that he had rented, while he went to the United States. He was there on September 11, 1908, when news reached him that he had a second daughter, and he sailed for home at once. On the ocean, reading Molmenti's *History of Venice,* he found an old Venetian name that captivated him. This he produced when he arrived, just in time for the christening at St. George's, Hanover Square.

The name was Degna and I am that daughter.

For the first months of my life I existed in the enclosed and swaddled world of a very small baby, completely surrounded by love and admiration. It was many years before I knew that while I lay, all contentment, in my cradle on the night of January 23, 1909, the White Star liner *Republic* was rammed by the Italian ship *Florida.* The first inkling of danger was the sound of a fog horn, alarmingly close. Then came the crash.

The *Republic*'s iron plates were torn and twisted by the *Florida*'s prow, her wireless cabin crumpled. The instruments and the young Marconi operator, John R. Binns, were unhurt. Though the ship's dynamos failed and her lights went out, he managed to get to the wireless through the wreckage and found that his emergency accumulators were functioning. Jack Binns had only

enough power to reach the Siasconset station: *We are shipwrecked. Stand by for captain's message.*

Out of the darkness word came back: *All right, OM. Where are you?* (*OM,* wireless language, meant Old Man.)

They were 26 miles southwest of Nantucket lightship, 175 miles from Ambrose lightship. Siasconset broadcast the position.

Ships, hearing the distress signal, altered course and headed for the stricken liner. The first to arrive was the *Baltic.* All day long the *Republic* drifted and the captain had his passengers transferred to the *Florida* and some of them subsequently to the *Baltic.* When all were safely stowed he called for volunteers to try to save his ship and Binns was one of the scratch crew. The *Republic* went down but everyone aboard was picked up safely. In all, over 1,700 people were saved, in great part on account of wireless.

To cheering, grateful crowds that bore him on their shoulders in New York, Liverpool, and his home town of Peterborough, and in the Watergate House office of Marconi Wireless Telegraph Company on the Adelphi where Marconi gave him a gold watch, Jack Binns kept reiterating that he had simply done his duty. A new kind of hero, the wireless operator, had sprung to fame.

By the time I was able to stand, even shakily, on my two small feet, Father was traveling again, with headquarters at Poole, where Mother and I went and where Mr. Kemp became part of my young world. Gravely he would stand me on a table and tell me, in impressive scientific terms, of all the newest developments in wireless while I watched him with round solemn eyes. This is hearsay, of course, another of the accumulated family legends. But I think it safe to assume that he did not tell me my father was then experimenting with one of man's oldest dreams, trying to extract gold from the sea.

From Poole, I am told, we went to Clifden in Connemara. Clifden served as an address but in fact the station was miles from any town, indescribably lonely and so isolated on the spongy bogs that it could only be reached by trolleys on rails. Cold dampness rose from the marshes and saturated everything, making even lighting a fire a problem. Yet that coast could be beautiful when the heavy sea mists swirled back and a pink sunset sky

was reflected across the gray ocean. Lilah remembered it like that. One afternoon she was walking with Father when suddenly they saw a wild swan rise with a fish in its beak, its great wings driving it high into the sky. Father was swept by joy that she, with her artist's eye, had caught the perfect moment and could share his delight in this wild and desolate country.

It is in this world of eerie fog that I think of him when I read his words set down by Orrin Dunlap: "The messages wirelessed ten years ago have not reached some of the nearest stars. When they arrive there, why should they stop? It is like the attempt to express one-third as a decimal fraction: you can go on forever without coming to any sign of the end.

"What is jolly about science is this: it encourages one to go on dreaming. Science demands a flexible mind. It's no use interrogating the universe with a formula. You've got to observe it, take what it gives you and then reflect upon it with the aid of science and reason.

"Science keeps one young. I cannot understand the savant who grows bowed and yellow in a workroom. I like to be out in the open looking at the universe, asking it questions, letting the mystery of it soak into the mind, admiring the beauty of it all, and then think my way to the truth of things."

Life for him was only periodically like that. The interminable trips went on and when he went to America in 1909, Mother elected to stay home with me, wishing to miss no hour of my growing. It was here that she discovered she was pregnant again and was so excited by the hope that her next child would be a boy, she set out on what seemed like a gay escapade. She crossed to Ireland and at Cork managed to get aboard a tugboat that was going to meet the liner Father was on at sea.

His welcome, which Mother had been sure would be ecstatic, was like a pail of icy water poured over her head. Returning to his bachelor habits, he was having a gay time with the ship's passengers, who included not only Enrico Caruso but also more than one enchantress from the theater world. The last thing he expected or wanted to see, popping out of the sea like a mermaid, was his wife's face. Mother realized that she was intruding and

retired to Father's cabin where she spent a miserable night dissolved in tears.

The next morning, covered with shame, he apologized and implored her to join the party. By then she was disheveled and distraught. She would have none of it and she stayed in the stateroom until the ship docked at Liverpool.

These were storms, violent and brief, of a sort that beset many marriages but, alas, these two proud, hot-tempered and quick-tongued people had more than the ordinary power to hurt each other and unusually tenacious memories to store up words spoken in anger.

They were on the best of terms again in December and Mother felt so well she decided to go to Stockholm. My father was to be awarded the Nobel Prize for physics, not alone but, to the surprise of the whole world, jointly with Germany's Professor Karl Ferdinand Braun. In his field, Father was the first Italian so honored, and the last until 1938, when the prize went to Enrico Fermi.

Aunt Lilah accompanied them, in theory to help with the packing—they had to take their best—but after she had stowed Mother's shoes on top of her hats, she was relieved of those duties. Carefully pasted in a family scrapbook is a poem called "The Incompleat Packer." I can only think that it was preserved to tease Lilah. In addition her dreamy, artist's unpunctuality drove Father crazy and she once told me she learned to be on time the hard way. It was too painful to be late.

During the trip, Father took immense care to keep Mother in good health and spirits, devotedly tucking her up each night and bringing her hot tea each morning. One day on the train, after he had to wait some time and had struggled back through an eternity of swaying cars, balancing the cup, he was incensed to have Mother's tea snatched from him by an unknown hand that reached out from a compartment door.

In Stockholm it soon became apparent that Professor Braun was as puzzled as Father at having been named to share the Nobel award, although he had done research on wireless telegraphy at the Physical Institute in Strasbourg. The situation was com-

mented on as an odd little cartoon of the two men appeared in a Swedish newspaper with Marconi saying: *I can't seem to place him,* and Braun bowing and protesting: *I am well known.* A caption remarks that Braun, who was so "unknown," was permitted to share Marconi's coin. The two men were at first equally reluctant to meet but when they did Braun charmingly apologized for being there at all and expressed the feeling that the whole award should go to Father. I am sure they promptly dropped the subject and began talking about the science that was so close to both their hearts, for I know that they parted as friends.

My mother doted on collecting autographs and they make a delightful record I still have: Selma Lagerlöf, who was named for Literature, Dr. Braun, the reluctant, bearded professor, Th. Kocher, winner for Medicine and Physiology, as well as a souvenir of an afternoon's entertainment. From this tea with the Swedish Crown Prince and Princess, Bea brought back the signatures, *Margaret* and *Gustaf Adolf,* on a piece of the Queen's notepaper. Mother printed tidily at the top of the sheet that it had been "given at a quiet tea at the Royal Palace. The 2 sons came & helped clear away tea. Their nurse, Agnes Weston, had been our nursemaid." Agnes, who was at Dromoland for years, kept photographs of the O'Brien children all over the royal nursery.

Early in March Father left for South America on the Italian liner *Principessa Majalda* with H. J. Round, one of his ablest assistants, who was proud of what they accomplished in receiving messages from Clifden at a distance of 4,000 miles by day and 6,735 by night but even more gleefully delighted at a trick his boss pulled on him. "It was," he wrote, "the most fascinating voyage I ever had with him. We flew kites from the ship whenever the wind would allow us, usually up to a height of 6,000 feet. Launching a kite from a ship is not an easy matter. I remember one day trying to get one up when the wind was unfavorable and finally giving it up. G.M. (for that was what we called him among ourselves) came along presently and suggested with a sly smile that he would try his luck, remarking that some people did not know how to do it. Much to everyone's surprise he launched the kite with ease. It was some time before I discovered that before-

hand he had arranged with the captain on the ship, who was a friend of his, to alter the ship's course sufficiently to give him a good launching wind."

Father was so convinced that the next child would be a boy he persuaded Bea to have it in Italy. He wanted his son to be born in his country and to be an Italian citizen.

Aunt Lilah, whatever her failings, was the soul of kindness and she agreed to go with Mother, as Father could not leave England and when he did would have to make another trip to the United States.

Villa Grifone had not been inhabited since Giuseppe Marconi's death in 1904, but the caretaker was forewarned of our arrival and he and his wife, Assunta, had the house aired and swept, the beds made and a simple meal set on a snowy cloth outside under the loggia, where mauve panicles of paulownia blossoms showed against the deep blue sky. As the day ended the mountains turned pink in the sunset and while my nurse, Mrs. Simons, packed me off to bed, my mother and aunt sat enraptured by the bucolic beauty around them.

Nurse Simons was the first to find life a great deal too bucolic at Villa Grifone—"primitive" she called it huffily. There was no such thing as a bathroom in the house and she couldn't imagine how Nurse Barnes, who was coming out to look after the new baby, was going to manage. Father had realized that there would be outraged protests and had contracted to have a bath built next to his wife's bedroom. It was exceedingly sumptuous, lacking only water since the money to pipe it in had, at the last minute, been sidetracked to the London payroll.

The sisters found everything rather a lark, giggling together over Mrs. Simons's and, later, Mrs. Barnes's gloom, and wide-eyed at how different housekeeping was in Italy from the well-ordered, accustomed ways of England. Tea could be found only with the greatest difficulty and then, to their astonishment, only at the chemist's. Fish, which they had expected to get still dripping from the Adriatic, for some quaint reason could only be obtained in bi-weekly consignments from the Anglo-American

store in Florence and arrived with a disquietingly preserved taste. And this in a Catholic country! Neither woman could get accustomed to the Bolognese food and tried "one weird cook after another." But they were young and happy and everything they saw pleased them—the rolling, fertile landscape and the white oxen pulling farm carts across it as spring came. To solve their domestic problems they sent for a couple, Mr. and Mrs. Martin, from England. By mistake this pair boarded a train for Venice and when Mr. Martin, who knew only one Italian word, recognized that they were lost, he went from person to person saying it till they were put on the train for Bolgna. The word was: Marconi. She was very tall and imposing, he smaller, stocky and a little cocky. It is easy to imagine Aunt Lilah and Mother were amused rather than cross that autumn, when he took part in the *vendemmia,* the harvesting and pressing of the grapes, and got royally drunk.

Giulio Giovanni Vittorio Marconi was born on May 21, 1910. Father was in mid-Atlantic, on which ship Mother did not know, so she sent a wireless to "Marconi—Atlantic" and it was relayed from ship to ship until it reached him.

Most emergencies Lilah surmounted with the aid of a large red Anglo-Italian dictionary, continually under her arm, but it failed to inform her that in Italy the birth of a child must be registered within forty-eight hours. The minute he arrived Father asked her stonily if this had been attended to and she burst into tears. He dried them as readily as he had caused them, so happy was he at having a son.

At this joyful, family time, it seemed to Beatrice unaccountably cruel to have Marconi come in the next morning and kiss her good-by. She was so crushed at being left that he confessed he was going no further than Bologna and that only because he had just been given a free pass on the railway and wanted the fun of seeing the surprise on the faces of the ticket collectors. He was back at Grifone, elated, by nightfall.

A few days later little Giulio was christened by a Minister of the Waldensian faith in the big room on the ground floor, which

was banked with flowers for the occasion. The name Giulio was in remembrance of that Giulio Camperio who had been Marconi's boyhood friend and whose sister, Sita, and Lady Marjorie Coke were godparents while William Waldorf Astor was a godfather by proxy.

The rest of that summer passed happily at Grifone, its peace reflected in the old photographs: Aunt Lilah on the terrace, wearing an apron and cleaning paintings, with one round canvas propped against a tree; Mrs. Barnes, portly and possessive, watching Signora Sita, who holds the new baby to have its picture taken and will, a moment after, have to surrender it to the gorgon; myself, all curls and ruffles, my hat, broad-brimmed against the sun, now turned up, now down, and, when Mrs. Simons is out of sight, discarded altogether; Father, gay and debonair, seemingly delighted to be home again.

It was an idyll that did not last. When they went back to England the next winter, the tensions between my mother and my father became truly serious. They rented a large old Georgian house in Richmond Park, near London, so Bea could do everything possible in the way of entertaining for her two youngest sisters who were just coming out. At the Old Palace, as it was called, she gave luncheons and dinners, and she must have loved doing it for she has remembered the names of many of her intimates and guests, the notable beauty Georgina, Countess of Dudley, Lady Beatrice Pole-Carew, Lady Curzon, Lady Maitland and the rest of the delightful social butterflies. "We wore," she remembers, "suits of ribbed material with embroidered peek-a-boo muslin blouses with lace jabots and stiffly boned collars. Waists were tiny. At Ascot, we all went to Ascot, gowns trailed on the ground and hats, Gainsborough style, were heavy with feathers and flowers and were secured to our heads with huge pins. I wonder, now, how we balanced them on our heads and why we did not blind our escorts with what amounted to swords piercing our hats. In the evening we wore diamond dog collars and sheath-like lamé or brocade gowns with long trains, which we had to hold up while we danced."

At first Father tried to keep up with this sort of life. His work

load gradually forced him away from it altogether and he and my mother saw less and less of each other even when he was in England. His nervousness and irritability increased—he still had more business affairs to contend with than he was by nature fitted to handle—and with them his irrational jealousy. It could not well have been otherwise, for my mother undoubtedly had plenty of "escorts" for the dances and parties he did not attend.

Grave trouble developed between them, for all their love. They came very close to parting, but two people whom they both trusted utterly dissuaded them. Surprisingly Marconi's own devoted mother took my mother's part and Filippo Camperio acted as a mediator. These two compelled the unhappy couple to make up and Pippo, as Filippo was called, persuaded Father to take Mother on an automobile trip through Italy.

In a brand-new Fiat they went to Pisa and to Coltano, the first wireless station in Italy. Even on a journey of reconciliation Father continued to be Father. The King visited the station and invited them to dine at San Rossore. Poor Mother had studied Italian assiduously for just such an occasion and she set out for the party in exuberant high spirits. They were dashed when she arrived to find everyone chattering volubly in French, the language she had dropped to concentrate on Italian. Moreover, she had driven in an open car over dusty roads and felt that she looked a fright with her pompadour windswept, her cheeks flushed. Despite these calamities, Queen Elena that night invited her to become her lady-in-waiting, an honor rarely given to a foreign-born lady. When some objections were made the King countered by saying: "As for her family, it is as old as ours."

They left Pisa on September 25 with Marconi driving, his wife beside him and the chauffeur in the back seat. Father was a good driver but at 12:30, just as he was leaving Spezia on the way to Genoa, a car came too fast around a hairpin curve, went out of control and zigzagged across the road. It ran straight into theirs.

At first it seemed that Mother and the chauffeur were worse injured than Father. The passengers of the other car, overturned in the ditch, were badly shaken but not seriously hurt.

Marconi sat quietly at the wheel and there was blood on his face. As soon as his wife noticed this she asked anxiously how he felt and he answered, calmly as always, "I believe I've lost my eye."

Someone was sent to telephone to the Military Hospital at Spezia and the Duke of Abruzzi, uncle of the King and a great explorer, sent his car to bring them back to it. By 1:30 Father was in a hospital bed, his right eyeball, temple and cheek terribly bruised. By this time he was suffering great pain. As the hours passed and the wounded eye grew worse, the surgeon discovered that the optic nerve was affected and the vision of the left eye was diminishing rapidly, also.

Beatrice, bruised sorely from the waist down, nevertheless stayed at his side. A famous eye specialist, Dr. Baiardi, was summoned from Turin and decided that to save the left eye it was imperative to sacrifice the right one but called Dr. Fuchs of Vienna in consultation. This noted man came at once and concurred that the injured eye must be removed.

Father insisted on walking, unaided, to the operating room, though his wife was on one side and Solari on the other. During the operation, performed without anesthesia, he groaned but uttered no cry. When he was once more in his own bed he said, "I am not suffering any more, thank God."

Messages of sympathy arrived from everywhere and the King and Queen of Italy came on the royal yacht, *Vela,* to visit him. After about ten days the bandages were removed and, though he had been told that he would be able to see out of his remaining eye, he found, to his horror, that all sight was gone.

The next weeks were spent in spiritual agony. During them he planned to retire to Grifone and have other men work under his direction. No more, he thought, would he observe his universe, but he intended to go straight on questioning it.

By God's grace, his vision was gradually restored to his one eye and the old, happy relation with my mother had a renaissance, too. She read to him by the hour, nearly the whole day and well into the night, newspapers, above all the then mammoth London

Times, and magazine articles. If her voice failed and she stopped, he begged her to go on, his appetite for entertainment and the sound of her voice insatiable.

At first the remaining eye was very weak; he could tell darkness from light but that was about all. One wonderful day, lying in his hospital bed, he was able to distinguish the white sails on the blue Mediterranean. It was only then that he realized what blindness would have meant to him.

CHAPTER FIVE

My brother's and my young lives were cheerfully unaffected by our parents' drama. One of the recommendations Pippo Camperio made for their future domestic peace was that they get a place in the country. Mother accordingly found, rented and furnished a romantic, if impractical, house looking across Southampton Water. Eaglehurst at Fawley, where we were installed, stretched out wide and one story high—all windows, vines and chimneys—to end in matching, two-story octagonal wings with the crenelated tops that so obsessed a Gothic-minded generation of builders.

What we youngsters enjoyed about Eaglehurst, besides our pony cart and the sheltered, pebbly beach, was the tower. This was a curious and entertaining eighteenth-century architectural folly, a narrow three-story structure fitted with Regency bay windows and crowned with a round, three-story turret surmounted by the inevitable battlements and a flag. Underneath, cavernous cellars gave access to the beach and were reputed to have been used long ago for smuggled treasure.

The tower stood on the lawn above the water's edge and my mother climbed up it with me on the morning of April 10, 1912, to watch the *Titanic* sail by. I was only three and a half years old

and yet I still recall how tight she held my hand and I sensed that she was sad. When I was older I knew why. She wished she were on board.

She and Father were invited by the White Star Line to be guests on the maiden voyage of the *Titanic* but their plans went awry. Father switched his passage to the *Lusitania,* which departed three days earlier, because he had a mountain of paperwork to clear away and knew that the public stenographer on the *Lusitania* was quick and competent. His own Mr. Magrini was hopeless on shipboard; he was seasick from shore to shore. Mother expected to follow on the *Titanic* and Father, his correspondence dispatched, planned to meet her in New York for a short vacation.

Then Giulio spoiled everything by coming down with one of those alarming baby fevers which may be a prelude to anything, or nothing. She cabled that she had to postpone her trip and settled down to watch over her youngest and to face another of those endless separations that so disrupted her marriage.

Together we waved at the ship, huge and resplendent in the spring sunlight, and dozens of handkerchiefs and scarves were waved back at us. As the *Titanic* passed from our view over the calm water we slowly descended the steps. It was a long way down.

Father, his work cleared up, docked in New York just in time to hear that a wireless message had been received at Cape Race which might indicate a disaster at sea. *The New York Times* published it on the morning of April 15: "At 10:25 tonight the White Star Liner *Titanic* called CQD [this was the international distress signal that preceded SOS] to the Marconi wireless station here and reported having struck an iceberg. The steamship said that immediate assistance was needed." The *Times* promptly wirelessed the *Titanic*'s captain, Edward J. Smith, master for all White Star maiden voyages, who was going to retire after this one, and got no reply.

A period of total confusion ensued, both on land, where relatives and friends inundated the *Times* and White Star offices, and in

the air. From the first word that the *Titanic* was in trouble, land stations, of which there were many, and amateurs of wireless, a new and enthusiastic crop of hobbyists, jammed the atmosphere. There was pandemonium. No one could tell what was really happening.

However, by afternoon the New York *Evening Sun* had sorted out the tangle to its own satisfaction and ran a banner headline: ALL SAVED FROM TITANIC AFTER COLLISION. The story below was headed: RESCUE BY CARPATHIA AND PARISIAN; LINER IS BEING TOWED TO HALIFAX AFTER SMASHING INTO AN ICEBERG. And it began: "Canso, N.S. The White Star liner *Titanic,* having transferred her passengers to the *Parisian* and *Carpathia* at 2 o'clock this afternoon, being towed to Halifax by the *Virginian* of the Allan Line.

"The *Virginian* passed a line to the *Titanic* as soon as the passengers had been transferred and the latest word received by wireless said that there was no doubt that the new White Star liner would reach port.

"Agents of the White Star at Halifax had been ordered to have working tugs sent out to aid the *Virginian* with her tow. . . ."

Marconi stock rose from 55 to 225.

Not everyone misread the enigmatic messages that kept arriving. Tragic rumors spread and persisted and people kept arriving in Bowling Green by trolley and carriagelike automobiles.

It was 6:15 before the truth was known and New Yorkers heard it at seven o'clock. The ship was down and there had been a terrible loss of life. Later a list of survivors who had been picked up by the *Carpathia* was posted at the White Star office. It was pitifully short, around seven hundred names out of more then twenty-two hundred. In the meantime there was silence from the sea. The press, affronted by lack of news, growled and whined. The full horror was only comprehended when the *Carpathia* came up New York harbor through the rain on Thursday night.

As soon as her gangplank went down, Father stepped out of the immense and silent crowd at Pier 54 and, with police clearing the way, was one of the first to go aboard to interview the wireless

men: *Carpathia*'s Thomas Cottam and *Titanic*'s second wireless officer, Harold Bride. Her first officer, John George Phillips, was dead.

Aboard the *Titanic* on the night of May 14, Jack Phillips's duty with the earphones should have gone on until two the next morning but it had been a long, exhausting day and Bride, who was sleeping on the other side of the wireless cabin—the bunks separated from the office by a green curtain—had decided to get up and relieve him earlier. Not long before, Phillips had been warned of icebergs by the *Californian,* a ship in the vicinity. Warnings of ice had been coming in since five in the afternoon and the lookout was on the alert for it. Now, tired and anxious to get clear of the dozens of frivolous and foolish messages that were making it impossible to finish his serious business (receiving routine news from Cape Race) he replied testily: *Shut up, shut up! I am busy; I am working Cape Race.* When at last that was over, he went to bed. A minute after Bride put on the earphones, Captain Smith stuck his head in the wireless cabin door to tell the men that the ship had struck an iceberg. They were to stand by while an inspection was made to see "what it has done to us" but were to send no message until he told them to.

The captain was back in a few minutes, commanding: "Send the call for assistance."

Harold Thomas Cottam, aboard the *Carpathia,* took down the first message: *Come at once, we've struck a berg. It's CQD, OM. CQD*—Come Quick, Danger.

Harold Bride remembered, as Phillips pounded out the *CQD*s (–.–./––.–/–..), that the old distress signal was being replaced with the far easier-to-send letters SOS (.../–––/...) and suggested that Phillips use them. "It may," he said with a grin, "be your last chance to send it." It was also the first time that signal was ever put on the air.

The *Carpathia* log records: "Heard *Titanic* calling 'SOS' and 'CQD' and ten minutes afterward, 'Course altered.' "

On shore, twenty-one-year-old David Sarnoff was operating the newly installed wireless station on the roof of Wanamaker's

department store. He picked up the message: *SOS SS Titanic ran into iceberg sinking fast* and for seventy-two hours thereafter stayed at his post, taking every message that came through.

In the wireless room on the port side of the *Titanic*'s boat deck which looked out on lifeboats 4 and 6, Phillips worked unceasingly. Answers from other ships began to pour in. Relayed from vessel to vessel, the news spread through the air and across the waters. The *Californian,* a ship of the Leyland Line, alone was really close but her one operator had signed off for the night. As captains altered courses they could not know that time was running out for the *Titanic.*

At 1:45 Phillips wirelessed Cottam of the *Carpathia: Come as quickly as possible, OM; engine room filling up to the boilers.* At half-past twelve the decks were awash, the power was failing and Captain Smith came into the wireless cabin to tell the officers they had done all they could do. It was time to abandon their posts and look out for themselves.

Phillips continued to send, in spite of fading power. The *Carpathia* noted: "Signals very blurred and end abruptly." In the *Titanic* wireless cabin Bride strapped Jack Phillips's lifebelt around his body and draped his overcoat over his shoulders. He could not get Phillips's arms into it because Phillips's hands were busy. Bride tried to get him into his shoes but this proved awkward and Phillips said: "Look outside and see if there are any boats left. I may not need them."

A few minutes after two o'clock the *Virginian* heard two *V*s—the last call that was picked up. Aboard the *Titanic* there was water in the wireless room now and the spark of the wireless was dead. Bride and Phillips started out together with Jack Phillips heading aft. The last time Bride ever saw Phillips was outside the deck house. Alone, Harold Bride went over the side. The *Titanic* was sinking "like a duck that goes down for a dive," he said afterward, and he swam crazily to avoid being pulled down by the suction. He somehow managed to get underneath one of the collapsible lifeboats that had overturned and here he stayed until so many people piled up on it he was forced out and onto it, too.

Bride was the one man alive on that ocean who knew which

ships were on the way and would save them if only they could stay adrift and alive till rescue came. The temperature of the water was below 32 degrees.

At dawn, the *Carpathia* came through the icy sea. Bride and the other men were taken off their incredibly frail vessel—air had escaped and it settled deeper and deeper during the night—by a sturdier lifeboat. At 8:20 in the morning, after Bride was hauled aboard the *Carpathia,* he passed out.

When he came to, he went to work as soon as he could stand on his frozen feet. Thomas Cottam was close to collapse himself.

This was the story Bride and Cottam brought to Father on the evening of April 18 in the *Carpathia* wireless shack, safe at Pier 54. Walter Lord's haunting book, *A Night to Remember,* checked and refreshed the story for me.

As Marconi came down the gangplank after his long interview, he was bowed with grief but he made a brave statement: "It is worthwhile having lived to make it possible for those people to be saved.... I know that you will understand me if I say that all those who have been working with me entertain a true feeling of gratitude that wireless telegraphy has again helped to save human lives." Aboard, one of the survivors had said to him: "I wish you had been there in the early hours of the morning to hear the gratitude that went out to you...."

Not everyone felt gratitude. The public now remembered how it had been duped, how it had been told, on the basis of wireless messages, that the *Titanic* was safe. Marconi defended himself and his invention with a show of temper altogether foreign to his ordinary public demeanor.

"Good gracious," he fumed, "hasn't wireless done enough in this instance to free it from complaints? If you can prove that one of our operators either sent or gave out that message, I'll take my hat off to you. It is you journalists who are responsible for the confused and unreliable rumors about the *Titanic,* not wireless.

"This sort of thing happened before there was any wireless. Look at the confused and false reports that circulated about the Spanish-American war. Yet there was no wireless in operation

then. Here is John Smith, who happens to have a wireless outfit of his own. He gets what he thinks is a flash from the *Titanic* or some other ship, and he reads it as best he can. Then he sends word to the newspapers that he has word from the disaster. He gives it out and the papers print it. It may be entirely wrong or it may be only partly correct; but how is anyone to know?

"Now it is perfectly simple to understand why there should have been the long wait between the first wireless message telling of the collision and the dispatch telling of the *Titanic*'s sinking. What happened was this: the *Titanic* struck an iceberg. Immediately the ship's wireless sent out word and it reached land. The wireless kept working until it could not operate longer; the ship had gone down.

"Then came the long silence. The *Carpathia* reached the scene but could send no word ashore. Her wireless was too weak. All she could do was to keep on flashing until the *Olympic,* which had also caught the *Titanic*'s call, got within range. Then the *Olympic,* with her more powerful apparatus, relayed to land what the *Carpathia* sent. Hence, until the *Olympic* got near enough to receive the *Carpathia*'s waves there was no means of communicating with land after the *Titanic* sank. Whatever messages came during that interval certainly would not have been very reliable.

"I myself sent a long message to the *Carpathia* and was unable to get a reply."

It sickened him that wireless operators should be under attack in such an hour. Young Jack Phillips, the boy from Godalming, who earned $30 a month, had stuck by his post after Captain Smith relieved him of responsibility, as had the twenty-two-year-old Bride (his pay was $20) and Cottam had worked himself beyond endurance. For what? To be abused by the papers?

He was proud of them but far from satisfied with himself. Many lives had been saved, and he thanked God. Many more should have been.

"Some ships failed to hear the *Titanic*'s call for help because they were receiving news bulletins from Cape Cod," he explained. "With two operators, one could be working the news, the other—

on any ship properly equipped—could be listening for distress signals, which would not interfere with the long distance messages."

Marconi was considering how to cut through this problem. He saw no reason why the wireless rig could not ring a bell. If the ship carried only one officer and he was off duty, as in the case of the *Californian,* that would sound, rather like a fire alarm, throughout the ship. The experiments involved were lengthy, the change in maritime regulations, snarled as they were in red tape, slow. Not until October 1, 1927, did the auto-alarm become mandatory for many ships. From the time of the *Titanic,* too, must have dated Father's concern in producing a compact wireless sender and receiver capable of being manipulated by an untrained person, for use in lifeboats. The first lifeboat of the Royal National Lifeboat Institution was so fitted in 1926 and communicated with a port 185 miles away.

The *Carpathia* had found the wreckage and the survivors of the *Titanic* 34 miles from the position she had reported. Marconi conceived the idea of wireless lighthouses on shore to prevent such mortal mistakes thereafter. "By means of a wireless wave, which will be used exclusively for this kind of work, we are going to give him [the ship's skipper] his sense of direction. It is merely a matter of triangulation. The operator tunes in the wireless lighthouse at his right and then the one at his left and where the two bearing lines cross that is his exact location."

Finally the *Titanic* disaster threw into sharp focus the need for high-power transmitters on ships to lift silences like the *Carpathia*'s, transmitters able to reach both shores from midocean.

For Marconi there were touching expressions of gratitude. The *Titanic* survivors marched en masse to his hotel and gave him a gold medal. It converted my father into Apollo and he said, as he thanked them all, that he would cherish it not only for what it commemorated but also because it made him look so handsome.

The New York Electrical Society invited him to speak and the meeting got wildly out of hand. The men who jammed the hall cheered for minutes when Marconi appeared on the platform. Edison had sent a telegram and the hurrahs went up again for it.

When Marconi came to the lectern he had to wait a long time before silence fell and then he spoke seriously and modestly, interrupted again and again by applause. Michael Pupin said, in summing up, "If we must call our aerial waves by some name let us not call them Hertzian waves but Marconi waves. They are his." In his hands they had become an instrument against death.

CHAPTER SIX

That Pupin, even in a highly emotional moment, suggested giving Marconi's wave to Hertzian waves indicated the stature Marconi had acquired through his scientific contributions. From his pleasant, obscure beginnings, the boy who wanted to make a name for himself had achieved world renown amounting to adulation and the world that acclaimed the man grew larger every year.

My world was still enclosed within the walls that ran round the park of Eaglehurst, and very fine I thought it.

Winding up from the lodge gates to the house, the drive was bordered with oleanders and rhododendrons, much admired for their luxuriance in that part of the country. One of those wonderful lawns possible only in England lay like a carpet between house and shoreline and if you watched through the French windows at the front of the house, passing ships seemed to sail right across the grass. Peacocks paraded beyond. Though they were exceedingly fashionable—everyone still talked of Whistler's celebrated Peacock Room—Mother held to her superstitions (*"Terribly* unlucky," she would say) and mistrusted peacocks and opals with equal conviction. Like her wedding-gift opals, the peacocks were ultimately banished, to my sorrow.

The cellars of the tower were, by Nanny's edict, out-of-bounds,

condemned as damp and dangerous ("A child could be lost in them *forever!*"). This dark pronouncement, as we grew to exploring age, doubled the incentive to spend hours in the forbidden dungeons where we had the time of our lives.

In the shallow bay out front we learned to dog-paddle, then to swim in solemn black bathing suits. My blonde curls were vigilantly protected by a bathing cap so voluminous it practically swallowed my head. Near the beach a rowboat was moored and our elders, Mother, the many aunts who came to stay in our five or six guest rooms and occasionally Father, would row us around the quiet water. Father had also given Mother a "red wing," a small sailboat, but the tides of the Solent were so strong we went out in our motor launch more often. In it we could go clear to Cowes for the day and cook lunch in its neat little galley. Like Father, we children were in our element in and on the sea.

On weekdays Giulio and I rode our ponies in the New Forest which adjoined Eaglehurst. Sunday mornings mine was hitched to the pony cart and we drove primly four miles to the village church at Fawley. One Sunday morning, feeling uncommonly elegant in a new straw hat with a blue ribbon that dangled to my waist, I felt Giulio snatch it off my head. He stamped on it enthusiastically, seeing no justice in having to remove his cap in church while I was allowed to keep my hat on. Between us we made such a fuss that Father picked us both up, red-faced and howling, and took us home where we got a stiff parental scolding.

Giulio thought ponies rather tame. His greatest joy was to be taken driving in Father's car, a splendid Rolls, driven by Bindoff, who was our chauffeur for twenty years and, in our eyes, a member of the family. We liked to chatter with him from the back seat. Father disapproved. "A man," he said, "can't do two things well at once." I, alone, was not enamored of the Rolls; it made me carsick. With what I felt was unfeeling cruelty, as soon as I began to turn green I was ejected and told to run along behind until the fresh air made me feel better. I must say it sometimes worked.

Like the tower cellars, parts of the house were out-of-bounds to children but these restrictions we regretted not at all. The large

hall and rather gloomy living room we shunned with pleasure, far preferring a room beyond and down a few steps, which had a wide fireplace where a fire often burned, comfortable chairs and sofas and a pipe organ. Sometimes Father would take us there and play the organ. Sitting beside him on the high, slippery wooden bench, I was occasionally allowed to strike a note which seemed to me to reverberate for hours.

The nursery was up a flight of stairs, in the left-hand wing of the house, and on the landing our Pekingese, Manchu, stood sentinel in front of the door. Father came home so seldom, and when he did, spent so much time in the laboratory he had set up in the tower, that Manchu never accepted him as privileged to visit us. In Manchu's strict Oriental code, we children belonged to him; members of the family, including Bindoff, were suspect but tolerated. Everyone else must be kept at bay. Manchu had no conception of himself as small or powerless so he swung into action with a will, snapping and biting, every time Father appeared. Father felt guilty enough at seeing so little of us without having this noisy, nagging reminder that he was an outsider. He came to hate the "little monster."

In time the battle between the two grew so heated on both sides that Manchu followed the peacocks out of our lives. We were bereft and mourned him for days.

Father's arrivals thereafter—he always came straight to the nursery whatever the hour—were peaceful. Mother never knew when to expect him as he was given to driving down from London on impulse, often bringing Kemp or some other engineer, ostensibly to see what he was working on. It is more likely that he was unable to face a whole weekend without talking science. Instead of relaxing on the chaise longues in the garden, the men would drive to the Bournemouth pier and walk up and down it thrashing out their problems.

I remember that Father, even when the weather was warm, dressed in dark blue suits and wore the high collars that were *de rigueur* then, his tie matching the folded handkerchief in his breast pocket. He looked like any well-dressed, conservative businessman.

For years I had no idea that he had lost an eye, so perfect was the artificial one Dr. Rubbi of Venice had had made for him. Sometimes when he was tired his good eye got a little inflamed and watered and we were used to seeing him take out his handkerchief and wipe it.

With us children demanding more and more of her time and attention, Mother gave up handling Father's correspondence. His mother had indoctrinated him with the rule that it was ill-bred to leave any letter unanswered. When his name appeared in the papers he complained that it was sure to remind "so many bores," who had forgotten him, to write. Ordinary correspondence was a nightmare to him. Sometimes he would take a whole morning to compose a few replies, walking up and down, groaning and refusing to let Mother leave the room, though she had other things to do, lest he need to consult her about an idea or a spelling. His English was excellent but some words he never mastered. His pronunciation of "peculiarity" made even him laugh—he could not remember that the accent does not belong on the first syllable.

In the midst of writing, Father would jump up and go to the piano and play. Then, relaxed, he would turn back to his desk with the bulldog tenacity he brought to every job.

All his life every letter he received was answered, every job finished. "Do you hear them talking of genius, Degna?" he asked me once. "There is no such thing. Genius, if you like to call it that, is the gift of work continuously applied. That's all it is, as I have proved for myself."

Giulio's and my education began at Eaglehurst. The form it took was due to Father's old flame, Inez Milholland, who had become a firm friend of the family. She was still championing causes and when *The Montessori Method* was published in 1912, she advocated the system with her usual intensity. At her insistence, Mother read the book and was so taken with it she managed to find one of the first Montessori teachers in England for us. I remember learning to read and write as if it were a game and Giulio, who was younger than I, sprawled under the nursery table and took it all in as fast as I did.

Mother, who had never forgotten her humiliation at San Ros-

sore over her inadequate French, imported a French professor to Eaglehurst. He was a small man, floridly chivalrous in his manners, who adored Mother. Though she rather laughed at him, Father was sufficiently disturbed by his attempts at gallantry to send him away.

During 1912 my father, young though he still was, was irascible from almost unbearable fatigue. In the wake of the *Titanic* came honors and medals and an outpouring of praise from individuals and the public. He was still being deluged with it when the name that Father had made so famous was blazoned across newspapers and placarded on paper vendors' stalls in a new and terrible connection. Everywhere people began reading and talking about the "Marconi Scandals."

To the end of his life Father was wracked with anger at this abuse of his name. It seemed a denial of everything he had accomplished, an intolerable injustice. Whatever his faults, he was invariably just in his dealings with others and for himself he expected no less from the world.

It is old business today, the affair that earned that ugly title, but it came close to turning Prime Minister Herbert Asquith out of office. Even at the time it was intricate, "The Great Marconi Mystery, which would tax the pen of Conan Doyle, assisted by the brains of Sherlock Holmes to do anything approaching justice to it."

Briefly, England contemplated realizing an old dream of Father's, linking the empire with wireless stations. When the project for the British Imperial Wireless Network became known the price of Marconi stock rose abruptly. At the same time, Godfrey Isaacs, managing director of the Marconi Company, was handling the takeover of an American Marconi company, United Wireless. Isaacs offered shares to his brothers, Harry and Sir Rufus Daniel Isaacs, the Attorney General (later Lord Reading), who sold 1,000 of them to Lloyd George, Chancellor of the Exchequer, and 1,000 to another cabinet minister.

The government accepted the Marconi bid to build the new wireless chain on March 7. The signing of the contract was an-

nounced on July 15. Shortly afterward, allegations were made and gained credence that there was a Marconi "ring" and that the ministers of the crown had used their influence to promote the contract that raised the price of company stock which they held. Attacks grew increasingly intemperate and, to a man of Marconi's proud sensibility, wounding. "Mother Marconi has been a prolific parent and her chickens are spread all over the globe.... The Marconi Ring hoped to make as much out of wireless as Mr. Andrew Carnegie got out of the steel tariff." To Marconi, who had so recently dug into his pockets to save his company from going under altogether, this kind of talk was infuriating in the extreme.

By a fluke in the stock trading situation, the price of United Wireless broke overnight and investors, claiming they had been done out of millions, sought restitution from the Marconi directors. Writs were issued demanding an accounting and in due course there was a case and a long hearing. Marconi appeared on the witness stand and stated "most emphatically that I have never at any time speculated in any shares of my company.... During the whole period of the boom ... I have never bought or sold a share.

"I have never taken part in any syndicate, nor have I ever heard of any syndicate, nor do I believe any syndicate ever existed, in connection with any shares of the Marconi companies. Neither I nor my company has in any way been responsible for the fluctuation in prices...."

He concluded by "expressing my resentment at the reflections which have been made upon my company and upon me for having innocently entered into a contract with His Majesty's Government ..." and professed "regret that the services which my company and I have for so many years rendered to the Post Office, the Admiralty, the merchant marine and, in fact, the whole nation, should not have been deemed worthy of higher consideration."

The personal hurt shows even more clearly when one reads, "You see placards, 'Marconi Scandals,' 'Marconi Scenes,' and I

strongly object to my name being a byword in politics and a peg on which to hang all sorts of scandalous accusations in which it is not suggested by anyone that I am in any way concerned."

The end of it all was summed up by a specially appointed Select Committee: "So far as we have been able to ascertain, no minister, official, or member of Parliament has been influenced in the discharge of his public duties by reason of any interest he may have had in any of the Marconi or other undertakings connected with wireless telegraphy, or has utilized information coming to him from official sources for the purpose of investment or speculation in any such undertakings."

So it was over and amends were forthcoming in the form of sportsmanlike apologies. To cap them, King George, with his own hand, made Marconi an Honorary Knight Grand Cross of the Royal Victorian Order, an honor seldom granted to a foreigner. This entitled Marconi to call himself Sir Guglielmo, which he never cared to do.

However the price of what, from so great a distance, seems something of a tempest in a teapot, was very high. Aunt Lilah, who was close to Father and warmly fond of him, believed the affair "shortened his life." This is debatable on the evidence that he had many years yet to live. I would say rather that it heightened his native distrust of people, saddened him, and confirmed a tendency he had toward melancholy. His *joie de vivre,* except in short, almost hysterical, bursts was drained away.

Still more immediately distressing to Marconi was that the hearings had cost him irreplaceable time. Father was a man who respected time and never had enough of it. He used it like a miser, saving and spending it in his own ways. Unlike most men, he was the one in our family who insisted on arriving at the railroad station not *at* train time but a half hour before. The half hour was always turned to good account. One side of his undertakings, the theoretical part, could be as gainfully pursued on a station platform as in a laboratory.

An aftermath of the brouhaha was that all through 1913 a Technical Committee sat to assure the public that England's contract with Marconi was the best that could be made, that no other

system of wireless offered comparable value. This investigation was a source of grave concern and anxiety to Marconi. Engineers, undertaking to arrive at a fair estimate, visited the station at Clifden. Father felt at the outset that their attitude was both rude and hostile. The station and, I suspect, the self-control with which Father covered his inner nervousness, won them and they were generous in their praise before the day was over. The official report ended: "The Marconi system is the only system of which it can be said with any certainty that it is capable of fulfilling the requirements of the Imperial Wireless Chain."

Fine and reassuring words but the damage was done and its repercussions reached into my serene world of Eaglehurst, though my parents were too discreet to let us children know about it. Mother says that during these two years Father was given to periods of intense irritability that would explode in scenes of jealousy. She recalls sadly that neither of them sensed the danger of going to bed at night still filled with bitterness. No protestations of affection and remorse could quite heal the wounds that had been allowed to fester in the darkness.

This jealousy lived with them and poisoned their days and nights. Mother renounced the parties she loved, knowing that subsequent accusations would rob her of her pleasure. But so irrational were his paroxysms, they grew to include the few friends who still came and went at Eaglehurst, though they were mostly Father's special cronies. Filippo Camperio, Prince Gino Potenziani, the Marchese Imperiali, Italian Ambassador to London, Godfrey Isaacs and his brother, Sir Rufus, all liked Bea because she was high-spirited, friendly, and lovely to look at. Father resented it, sometimes to a point of embarrassing them.

Mother could no longer recognize in her husband the romantic young fellow who wanted to share his triumphs with her and to show her off to everyone, even though he scolded her, rather flatteringly, for flirting. It was as though, shaken by the slanders he had been subjected to, his vanity needed to be fed and he resented the affection given Bea as subtracting from the attention he craved.

Father's loneliness increased with the accumulating years. At

times he revolted violently against this self-imposed apartness and threw himself into new friendships with a feverish ardor. To have a *pied-à-terre* in London, my parents shared a flat in Sloane Square with Mother's sister, Moira Harvey-Bathurst, who worked as a decorator and theatrical designer. Through her, Father met the reigning actors and actresses of the day.

The *Titanic* and the Marconi "Scandals" made him a fascinating and redoubtable figure in his new friends' eyes. He responded by finding them "brilliant and amusing." Certainly his formality had never been assaulted so flamboyantly as in this world where friendships were easy come, easy go. They lionized him, which suited his current need for attention.

If jealousy were justified, it was Mother who had every right to be jealous. This theater world was no part of her world, neither as to its morals, which she knew were deplorable, nor its manners, which could hardly conform with her upper-class conventions. At a time when a single standard of behavior for men and women was inconceivable, her flirtations were limited to come-hither glances from behind a fan. His affairs were doubtless outrageous, but she was bound to accept them as long as she remained married.

Undoubtedly Mother found Father's friends bizarre but her small circle of intimates did not appeal to him, either. As Aunt Lilah described them, they "had not much brains and were not worth a rap." One reason why Father enjoyed his theatrical friendships was that they were so frankly superficial they did not impinge on his inner heart. At the same time, he longed for the warm, human love of which he believed his wife capable but which he never wholly won from her. In her way she failed him because, British to the core, she was incapable of expressing her feelings. The gap between them widened.

An event which further disunited them was the death of Bea's mother, my grandmother, Helen Inchiquin, early in 1913. She had been a stabilizing influence. Father had gone to see her as often as he could and frequently took her advice. Beatrice adored her mother.

The family finances, flimsy at best, had been supplemented by her mother's journalistic enterprise. There was sadly little

money left and a family conference was called to discuss the future of the unmarried O'Brien girls. Marconi volunteered to go to Dromoland in order to review the situation with the oldest son, Lucius. I still have a postcard he sent Mother about Uncle Lucius's wife, an heiress in her own right whom they hoped would help financially: "I have not run away with Ethel, her nose is too red. Love, Guglielmo."

The long journey solved nothing as Ethel was not prepared to take care of the O'Brien girls. "The crux of the matter," my father commented, "is that people don't understand the true nature of money. It is meant to circulate, not be wrapped up in a stocking." There was barely enough Inchiquin money to wrap up in a sock.

My father was never rich but he was inordinately and impetuously open-handed. Any hard luck story drew from him a prompt response. Inez Milholland said that she enlisted his aid for many people in distress in New York and that he willingly gave money and also visited the destitute when that seemed indicated.

It was when he was faced with making settlements that he shied off. Lady Inchiquin had insisted that he overcome his distaste for being, as he considered it, trapped by responsibility for his family, by making financial arrangements that would at least in part safeguard his wife and his children. It was a very good thing for them that she did.

For himself, his extravagance, the new cars, the Savile Row suits, were relatively unimportant. He enjoyed having cash in his pocket and when he did, he spent it freely. When he did not he was unperturbed. Father was only tight about money when business demands pushed him into a corner.

Dispirited at her mother's death and in real need of a change, Mother decided to go to Rome. She had been too involved in family affairs to do anything about her duties as lady-in-waiting to Queen Elena until now and she decided this was the time to take them up. Late in October, 1913, we left for Rome where we moved into the Hotel Regina on the Via Veneto, opposite the Palazzo Margherita, the Queen Mother's palace. (As a little girl I saw her once at a window across the street.)

The winter season was brilliant with balls every night. This was the life Mother gloried in and had long denied herself. Aunt Lilah joined us in Rome but, having no interest in society, stayed in a family pension at 42 Via Sicilia, recommended by Luigi Solari, where she paid eight lire a day, everything included. During the days she studied painting with Onorato Carlandi and often took us on outings after school. Mother sent us to the Montessori school, up the winding road which leads from the Piazza del Popolo to the Pincio, for a few hours each morning.

Father was seldom in Italy that winter. However he came for the New Year's reception at the Quirinal. "Beatrice looked like a queen herself," Lilah said proudly, "with her exceptionally fine figure in her plum-colored velvet dress and no jewels except the diamond E on the bright blue Savoia ribbon."

After the reception Mother brought Father to see Aunt Lilah's studio, a higgledy-piggledy room opening onto a small, untidy garden. Father said wistfully, "Oh, Lilah, how I understand you! This is exactly the sort of place where I could work."

We all loved Rome. For children it has the most wonderful parks and gardens and fountains. For Mother there were the delightful parties. Father enjoyed the honor of being made a Senator that year, a life appointment for which he had been ineligible before he was forty. Dutifully, however, our parents decided in the spring of 1914 that hotel life was really not suitable for children so we were taken back to the gentle routine of Eaglehurst. Lilah stayed on, immersed in her painting.

For us, riding our ponies past the rhododendrons as they started to bloom along the driveway, the outside world was as remote as ever. Father, however, was of necessity in touch with everything that went on.

Before dawn on May 29 the *Empress of Ireland* was feeling her way through heavy fog near Father Point in the Saint Lawrence River when, like the *Republic,* she was rammed. The collision with a Norwegian collier, the *Storstad,* was so severe it was obvious that the passenger ship could not long stay afloat.

Her chief wireless officer, Ronald Ferguson, sent a call for help which was received by the Marconi station at Father Point. He

had only eight minutes before power failed but in that time he got the comforting reply that two ships were being dispatched. Before he could activate his emergency power a fearful, final lurch of the *Empress* ended all hope of further messages.

Ferguson was in the icy water (the temperature of the air was only 4 degrees) for a quarter of an hour before being picked up. Of the 1,467 souls aboard he was one of just 444 who survived. Yet without the eight minutes of wireless, Ferguson said, "it is not likely that more than forty or fifty would have been saved."

Father rejoiced that some lives had been saved and fretted because wireless was not mandatory for all ships. In time of war, the trawlers and tankers and cargo ships would be at the mercy not only of one another and the sea itself but of enemy raiders.

As everyone who lived through it does, Beatrice remembers the warm, sunny June day when she opened her newspaper at the breakfast table and read that Archduke Ferdinand and his Archduchess had been assassinated at Sarajevo. It was a brooding, unreal summer for the grownups lived in the suspense that preceded the great war. For me, about to be six, it has blended with other childhood summers.

Toward the end of July, Mother and Father lunched with Admiral Beatty on H.M.S. *Lion* as the fleet lay at full strength in the Solent. In the launch going out to the flagship, they passed interminable rows of hulls rising above them from the water and Admiral Beatty asked them to come back that night for a dinner and dance, to see the fleet with the searchlights playing. The sea was choppy, a wind blowing up, and they said they would if the weather improved. It did not, so they dined quietly at home and went early to bed.

The next morning when they got up and looked out to sea they saw that it was empty. Not a ship remained.

England was at war.

CHAPTER SEVEN

England had enjoyed peace for fifteen years and war, despite uneasy weeks of anticipation since Sarajevo, came so suddenly that for some days confusion bordered on panic. The banks closed at once. Like everyone in England, we at Eaglehurst turned out our pockets and were chagrined to find how few pennies and sixpence they held. Mother was richest of all. She admitted that she had been traveling third instead of first class to London, converting the difference in the price of fares into half-sovereigns and stowing them in a china piggy bank. Since she had no idea how much she had saved, we gathered round with great excitement to break into her pig. The little pile of coins looked to our eager eyes like a positive mountain of wealth, but it counted out to only a few pounds, which were quickly spent on necessities and never, she ruefully recalls, replaced.

Italy, during the early months of the war, was suspect from the Allied standpoint in view of the Triple Alliance which bound her diplomatically to Germany and Austria. The distrust in our country district, heightened by frantic rumors of spies, focused on the Marconis. Father, everyone remembered nervously, had complete wireless equipment for sending and receiving in the tower, the reputation of which had always been lurid, and who

knew what anti-British messages or secrets he might not be sneaking out across the air? Even my British mother was under a cloud and for several weeks was not allowed to set foot outside the grounds of Eaglehurst.

Across the lawn, the war became very real to us as the emptiness of the sea was gradually broken by a procession of white ships, outward bound, enormous red crosses painted on their sides. In what seemed to us a tragically short time, they began to steam back to Southampton bearing the wounded.

As soon as sanity reasserted itself Father was free to pay a visit to Rome, where his mission was to rescue Aunt Lilah and his secretary, Mr. Villarosa, who wanted very much to get back to England. It was a complicated matter but Father succeeded in pulling it off when the British Ambassador, Sir Rennell Rodd, offered to allow Aunt Lilah and Mr. Villarosa to travel with the diplomatic courier. Father, who had to go to the United States, left them at Genoa to continue their journey saying, "Lilah, don't blame me if you are held up in Paris and have nothing to eat but rats. I've done all I can for you." They did not starve but Paris was deserted and a feeling of impending disaster filled the streets. She was relieved to leave it and even wintertime England seemed heavenly to her.

In London, Lilah became engaged to Coulson Fellowes, eldest son of Lord de Ramsay. They had a war wedding attended by Mother and Father and a few close friends. A year later Coly, as he was called, was in one of the soldiers' invalid homes, mortally ill from poison gas and exposure in the trenches. He died just before my cousin David was born.

Even more crushing to us was the loss of my Uncle Desmond, Mother's handsome youngest brother, an aviator who trained at Calshot and came to Eaglehurst to see us regularly. He died in one of England's first air raids of the war, over Zeebrugge.

Just before Italy entered the war in 1915 on the side of the Allies, Father was in New York as a witness in one of the endless patent infringement suits that plagued him for years. To Judge Van Vechten Veeder, who had upheld his patents, he said: "Your Honor, after consultation with Italian authorities, I have decided

to return to Italy at once. While war between Italy and her foes has not yet been declared, it seems to be only a matter of hours. I shall leave for Italy tomorrow and I am therefore impelled to cease my attendance here." The case was adjourned and he sailed on the *St. Paul.*

The New York *Tribune* printed a London dispatch about the voyage on June 2.

> As we approached the war zone rather elaborate precautions were taken to safeguard Mr. Marconi. His name was not on either the regular passenger list or the purser's list. There was a general tacit agreement among the passengers that if the *St. Paul* was stopped by a submarine and Mr. Marconi's person demanded we all would "lie like gentleman."
>
> Meanwhile Mr. Marconi removed all labels from his luggage, gave his private papers into my care and got into clothes suitable for slipping into a hiding place somewhere down in the bowels of the ship next to the keel, where the chief engineer said the captain himself would be unable to find him.
>
> We had a concert that night at which Mr. Marconi was to preside. The programs were inadvertently printed with his name as chairman. The captain ordered all programs destroyed. When the concert began the historian, Mr. Trevelyan, took the chair saying, "We were to have had the pleasure of having Mr. Marconi preside, but unfortunately he is not on board."

As soon as Italy did come into the war, Father volunteered to serve in his country's armed forces and was accredited as an officer on the Army Engineering staff to inspect mobile wireless units at the front. He found Italy was deplorably short of equipment and undertook to raise government funds for the construction of stations and the modernization of apparatus. Secrecy of communication was imperative and it is at this time that he began working on the possibilities of short waves and of direction finders.

At the height of the war, shortly after the Germans attacked Verdun, my mother gave birth to her fourth child. Gioia Jolanda Marconi was born on April 10, 1916, in a house on Pont Street,

rented temporarily for the purpose since doctors and nurses were in short supply in the country. My baby sister Gioia was brought back to Eaglehurst at once, however, since this was at the peak of German air raids, and christened in the small church at Fawley.

With Father officially stationed in Italy, the family could only be united if we joined him there. Mother dismantled Eaglehurst, selling some of the furniture and shipping some to Rome, though very little of it ultimately reached its destination. For me, going-on-eight, it was too sad for tears. Eaglehurst was home and I was overtaken by a forlorn feeling of having no place of my own. We were bundled up to London with a nurse and a nursemaid and after a few days set out with a mountain of baggage. I still remember London in the blackout as we drove by taxi to Victoria Station. A German Zeppelin had been sighted the night before and in fear that it might return, the sky was crisscrossed with the probing beams of searchlights. At the port on the Channel the air was hushed and charged with suspense and all of us, even tiny Gioia, crossed strapped into life preservers.

Father came to meet us at Domodossola, the customs stop between Switzerland and Italy, and we must indeed have looked like gypsies. "All you need," he said, "is a parrot."

In Rome, we went directly to the Excelsior and engaged almost all of the fifth floor, which had a grand view over the Via Veneto. Even so, it was a poor substitute for Eaglehurst and Father was no happier with hotel life than we were, especially here where the lobby was a gathering place for politicians and businessmen, many of them set on waylaying him as he passed. Getting to the dining room without being stopped was a wild scramble, Father racing ahead, looking neither to right nor left, while we trotted breathlessly behind. Father had a way of passing through crowds as if the people in them were thin air. Mother usually arrived at our table wringing her hands because of the number of people she was sure we had insulted.

One room of our suite was fitted up as a laboratory where Father spent long hours, even at night, although he was fond of crossing the street to join his great friend, Lilia Patamia, a remarkable and beautiful woman who kept something of a salon.

Here he and Mother got to know many important figures of the day: Francesco Saverio Nitti, soon to become Prime Minister, Gabriele d'Annunzio, Paolo Michetti, the painter, de Nicola, President of the Chamber of Deputies, and others. On occasion, we went along too and spent blissful hours in the kitchen with Giovannina, Donna Lilia's maid, who spoiled us shamelessly.

For a brief period we had a German governess who seemed to Giulio and me the very incarnation of cruelty. We had never known physical punishment—the Montessori method ruled it out. Under *Fräulein's* discipline, which involved striking our fingers, we got the reputation of being the worst behaved children in Rome. She aroused our lowest instincts. Poor woman! She died of pneumonia in our service and we children were told only that she "had gone away." I found out the truth and for a long time felt guilty because I had been so mean to her.

That summer, Mother took us to Viareggio and with the easy adaptability of children we loved it instantly and ceased to regret Eaglehurst. We began now to gabble Italian like natives and Mother's chief worry was that we would lose our English.

In the spring of 1917, the Italian government sent a mission, headed by the Prince of Udine, nephew of the King, to America to discuss financial agreements with our new ally. Father, who was being considered for the post of ambassador to the United States at the time, was a delegate, as was Nitti. They embarked with the greatest possible secrecy, as a security measure. While Father was away, every night before we were tucked in bed we knelt and prayed for his safe return. When he got back he made light of the dangers of mines and submarines but complained of the severe hardships of having to make too many speeches. The delegates had agreed to alternate but none of the others was known in America and audiences began shouting "We want Marconi!" when anyone else got to his feet.

Father joked about it but he was truly tired and felt life would be less strain if we reopened Grifone and went there to live. He could come and go between the front and Bologna with less fuss and bother. He had reckoned without the breakdown of transportation at the local level. It was practically impossible to get

in from Pontecchio to Bologna and in the end we accepted an invitation to stay with old friends, Count and Countess Gregorini, whose home, a seventeenth-century villa at Casalecchio, was close to the city and within walking distance of the tram line. Living with friends would keep Mother from being lonely.

We spent the autumn and winter of 1917 and the opening months of 1918 at Casalecchio and we could hear the guns when the Germans broke through at Caporetto. Undisturbed, Giulio and I roamed the big park and played in the huge granary in company with the gardener's children, who overnight became our best friends.

Though war washed around us and the town was filled with wounded, we felt safe and sheltered in that friendly house. Ugo Gregorini had gone to school with Father and his wife, Gracie, an American by birth, was warm hearted and easy going. Her two daughters, Minnie and Adele, whom everyone called Baby, worked faithfully every day for the Red Cross. Mother longed to do her bit, but Gioia was too young to hand over entirely to nurses so she contented herself with visiting and writing letters for the hospitalized when she could. She often walked to town to get a special baby food my aunt, Letizia Marconi, brewed and Gioia, just beginning to talk, called "my good soup." The only bread we had was wretched stuff that broke and crumbled to powder in our hands.

The war had its merry moments. Father would come home looking very spruce in his naval uniform (ironically, after our move toward the front he had been transferred to the Navy as a Lieutenant Commander) with little presents he had managed to find for us. Our country-sturdy legs were long enough by now for long walks and he showed us the haunts where he had played as a small boy.

The Prince of Wales was on the Italian front for a time and came to Bologna on leave with two aides-de-camp, Claud Hamilton and Piers Leigh, who were great friends of Mother's from London. In Baby Gregorini's small apartment they rolled up rugs the way young people did everywhere in those days and danced to the gramophone, and the Prince, a romantic youngster in his

early twenties, mooned over Baby's fair hair and round blue eyes.

We went back to Rome the summer of 1918 to live in the Villa Sforza Cesarini on top of the Janiculum Hill to the northwest, where the city gave way to countryside. Our windows overlooked the Paolina fountain and at first the sound of the water intruded on us, waking and sleeping, but soon it became the invariable, unheard background of our lives. Father thought that here, away from the main political arena of Rome, he could get down to work again. While Mother furnished the rest of the house to her taste, he took over the top floor and fitted out still another laboratory. By now his ex-laboratories were legion. The room was immense, larger even than the attic of Grifone and had, of its kind, an equally glorious view. In it, he had nothing but a large table. On this was a huge wire frame which pivoted at a touch to face any point. This sensitive instrument, possibly the first directional aerial ever built, was connected to a receiver that got signals from all over the world. Today it seems incredible but this was the only private radio (the word began to displace "wireless" in 1915) in Italy and Father often had important news before anyone else, which he forwarded to the government.

In this same laboratory, Father reached out for a new source of power and seemed so close to achievement that Nitti, now Prime Minister, delayed electrifying the Italian railways hoping that he would be able to use something more economical and efficient. Though Father sometimes talked to me about his work, I was too little to understand. One night I heard an immense bang on the top floor and rushed upstairs and burst into the laboratory without knocking. The floor was strewn with small pieces of metal and blood was pouring from a gash in Father's hand. He let me bandage it for him and suggested, conspiratorially, that the accident be a secret between us.

Father was very close to us in 1918, as the war was dragging toward its end. We could not go to school since the villa was too far out of town for us to make the daily journey and though Father drove back and forth to the Senate twice a day it was illegal for women and children to ride in automobiles. Instead we had lessons at home. Each day he arrived at about a quarter to twelve

to take us for walks, sometimes nearby to the Villa Doria-Pamphili where we were allowed to go every day, sometimes to the Piazzale Garibaldi where we would stuff our fingers in our ears when the cannon was fired at noon and the hundreds of church bells all over the city pealed in response.

Lunch was designated an intimate family meal. Even our governess, Miss Cathie, whom Mother had contrived to have come out from England to help us keep our English fluent, ate alone. Actually Father often brought home his colleagues and friends and we were relegated to the foot of the table. Nitti was frequently with us and his daughter Filomena, a keen, dark-haired little girl just my age, was my boon companion.

It was Nitti who recommended that our education be encharged to one Signorina Cardinali but Miss Cathie was our real love. She had a passion for Rome and conveyed her enthusiasm to us on the afternoons when we bicycled into town and she made sightseeing an adventure.

Mother had never become the bicyclist that Father had dreamed she would so, except when she could get one of the rare *carrozzelle,* drawn by a nag so ancient and feeble she had to get out and walk up the Janiculum behind the carriage, she lived a full-time country existence. To beguile her, Miss Cathie started giving Mother piano lessons and then time was no problem. She would cheerfully practice five or six hours a day and became very accomplished.

There was a great to-do in the house the day that Father announced that Cardinal Gasparri was coming to call. The Vatican was considering setting up a radio station, and he wanted to discuss it with Father. We were all Protestants and had no idea what the proper procedure should be. In the end, according to etiquette he was received at the door by the staff, each with a long, lighted taper in hand.

My room at the villa must have been very ordinary for I never got over my envy of Giulio's. His was circular and he was allowed to keep all the birds he liked in it. Cages were stacked on cages and he would open their doors and let his birds fly free even when the windows were open. They rarely strayed, as he fed

them mightily, and they preferred to settle on his shoulders and outstretched arms and to try to snatch birdseed from his overall pockets. Further enhancing this magical room there was a maze of tracks and dozens of trains, expresses, locals, freights, switching engines, and hand cars. Giulio spent hours flat on his stomach on the floor trying to set them all in motion at the same time and engineering splendid wrecks. It was an eternal problem for the servants to get in to clean the room (and with all those birds it needed it) since Giulio was as outraged as Father if "his things" were touched.

We hardly remembered a world without war and Gioia had never known one. It was the natural state of things. Father called for me one evening (I know now that the date was November 5, 1918) and I left the schoolroom and climbed the stairs to the top floor. I came in quietly and he waved to me not to speak. The earphones were on his head and his expression told me that what he was hearing was important. In a couple of minutes he stood up, a strip of paper in his hands, his eyes glowing. When he spoke his voice was exceptionally low and vibrant. "The Kaiser," he said, "has abdicated." In all Rome, Guglielmo Marconi and his ten-year-old daughter were the only two souls who knew it.

CHAPTER EIGHT

I can see now that the war years were a time of reprieve for my parents' marriage. It was nonetheless drifting toward catastrophe. For four years the Marconi family was drawn and held together by the immensity of the horror which swept Europe. There was no place for pettiness against the background of death and destruction. After the nations found peace again, we lost ours.

For a time, life in Rome jogged along at the pace we were accustomed to. Scenes stand out, sharp in my memory, from the year that followed the Kaiser's abdication. The night Trento and Trieste were given back to Italy, Father took Giulio and me to watch the crowds, wild with joy, from a balcony of the Palazzo della Consulta, opposite the Quirinal. The city was flooded with light and sparkled. Again and again the jubilant mobs hailed the King and Queen out to bow and cheered themselves out of breath in the radiant certainty that following this last victory there could never be another war.

There were some dark weeks when influenza ran epidemic through Rome. We, as a family, were spared but our household was not. No one was willing to work in a house where there were known to be cases so Mother, single-handed, set up an isolation ward in the villa and nursed her servants while we managed as best we could.

At Christmas, Father gave Giulio a glorious toy steamer. There was no place to launch it except the basin of the Paolina fountain and, after much teasing, Giulio got Mother's consent to go there, accompanied by Father's batman. Two hours later my brother was on the doorstep in a flood of tears. His ship, out of control, was heading for the gushing cascade of the waterfall. The water was icy, the deadly *tramontana* blowing, yet Mother, with British fortitude, pulled on her bathing suit and ran to the fountain. To everyone's consternation, she plunged into the water and recovered Giulio's foundering boat. The Romans who watched this daring maneuver shrugged and muttered: "What can you expect? The English are mad." No one ever dared tell Father what had happened.

Our existence was as secluded as it had been during the war. However, from time to time friends invaded my parents' privacy, coming out to the villa to dine or persuading them to lunch out at their favorite *trattoria*. Rustic La Villetta was outside the Porta San Pancrazio, not far from home, on the winding country road that flanks Villa Doria-Pamphili. I can still see the long tables, covered with white cloths, under the trees, and can hear the poets, Trilussa with his heavy Roman dialect and the fiery D'Annunzio, reciting verses they had composed on their way to the restaurant.

It was agonizing, at the age of ten, to have to wait till all the grownups were ready to leave, sometimes not until five in the afternoon, by which time I considered the whole day spoiled. But some encounters were more pleasurable for me. One lovely, flower-scented summer night I slept in Mother's room because I had a fever and was waked by the sound of guitars in the street playing a serenade. Peering down from behind the curtains, I gleefully recognized D'Annunzio's bald head among the romantic cavaliers.

As the months passed, the excessiveness of Father's ups and downs grew more marked. For a while he had seemed to enjoy Giulio and me as potentially interesting human beings. But as the summer waned he seemed to forget us and grew increasingly reclusive, locking himself up alone in his laboratory. To Mother, he confessed that he had lost all desire to go on living—he was

convinced that his creative faculties were failing. After these bouts of melancholy, he rebounded violently into brilliantly creative phases. In his successive times of triumph and despair, all the old tensions latent in the days at Eaglehurst reasserted themselves.

A trip to London restored domestic equilibrium for a little while. Prime Minister Nitti decided to lead a delegation to negotiate a loan. Father took Mother along. They stayed at the Savoy and at night they walked along the embankment to Westminster trailed, to Father's unfailing amusement, by two Scotland Yard men. The loan, Uncle Donney, a City broker, told me, was all but granted on the strength of Father's good name in the City but Nitti, over Father's protests, decided to return to Italy before signing and it was ultimately denied.

Frustration was Father's sole reward when he was forced onto the political stage. After the loan fiasco, Nitti drafted him to go to the Versailles Peace Conference. This was the greatest heartbreak of all. Like Cassandra, he foresaw disaster and like Cassandra's, his words went unheeded. "It seems to me very bad," was the way he put it, "after such a war as this that a wave of brutality should be passing over Europe. It makes one not so much afraid as ashamed—ashamed of civilization, of Europe, of human nature.

"People like to make out that the Russians are not Europeans, but they are. This wave of brutality, rising in Russia, Christian Russia, is spreading westward. Think of all the people who are now stirring up disorder.

"I can't help hoping the League of Nations will save us. I am very much in favor of the League. I've met President Wilson and discussed his ideas with him, but the rest of the world will have to help him if the League is really to exist.

"If this noble and grand idea fails, the next war will be infinitely more terrible than the last one. Civilians will certainly be much more implicated. Cities could be blotted out from the air—I hope men will soon turn their thoughts away from war."

Father had been distressed at Orlando's failure to solve the Adriatic problem. When Aunt Lilah asked him: "Why don't you

tell him what you think?" Father replied sadly: "I do. Everyone turns my ideas down bluntly. They think of me as a mere scientist."

Yet the "mere scientist" was drafted once again by Nitti, who could always bend Father to his will by appealing to his sense of duty. This time he was to head the powerful Banca di Sconto. A nominal post, Nitti assured Father. When, in December, 1921, the bank collapsed, Father was emotionally incapable of taking its failure impersonally and it inflicted a deep blow to his faith in himself and in Italy. For the first time he wanted to quit his country, so deep was his depression.

To the rest of us in the family, Italy had now come to mean home. Father had bought the house near the Borghese Gardens, where we had taken root since the war. It was commodious and pretty and countrified like Eaglehurst, with a tennis court, a garden, and tree-shaded lawns. And, most important of all, it really belonged to us; we had ceased being transients. Mother was so happy she began giving parties again and Giulio and I would sneak out of our rooms to sit at the top of the marble staircase and watch the dancers waltz through the hall. When the maids discovered us they smuggled plates of homemade ice cream out of the kitchen for us and we were in heaven.

We loved that house, yet Father decided to sell it. Mother fought to save it, while he wavered. She saw with tragic clarity that it was a great deal more than just a building. So long as her husband used it as a retreat where he could find, even at long intervals, the peace he needed, it was home, and a hope for the continuation of their marriage. High-spirited though she was, Beatrice was playing for high stakes and she sacrificed her pride. In her wisdom, she let her man range when he wanted to and live like a bachelor when he wanted to, believing it was the only way to get him home at last. What she was fighting for now was a home, a physical property which she had endowed with the qualities that made it a symbol of family life.

There had always been women in Marconi's life, but Beatrice had held her own, tolerating his adventures because they ended in homecomings. Now for the first time she knew he was capti-

vated by a woman who had deliberately set out to undermine his marriage. She was beautiful, this woman, Paris-chic, and cunning. She understood what Beatrice felt about the house and she used all her considerable weapons to persuade Marconi to sell it.

She played on the side of his nature that dreaded permanence, fearing that it would trap him. When, after months of indecision, he made up his mind he would look for a buyer, he told Mother with seeming logic that there were two reasons for taking this anchor from us: the failure of the bank, which had cost him money, and his purchase of a yacht.

The *Elettra,* as he christened her, was a noble ship, 220 feet long over-all, originally built in Scotland for the Archduchess Maria Theresa of Austria (who called her the *Rovenska*) and subsequently requisitioned by the British Admiralty to serve as a wartime minesweeper. Her new name was selected after endless family conferences, with each of us offering suggestions. Father himself rather fancied the Italian name *Scintilla* which means spark but was so appalled at the probability that the English would pronounce it *sintilla* rather than *shintilla* that he settled on *Elettra* because it is indestructible in any language. "The yacht," said Father in self-justification, "not only makes me independent but it takes me away from curious eyes and distractions. I can work there at all hours of the day and the night, finding without delay suitable grounds for all kinds of experiments which would be difficult and complicated to carry out on land." It was the old cry, "away from curious eyes and distractions," and he never understood that when distractions failed to materialize, he created them himself, out of an undeniable need.

While the *Elettra* was being fitted for his use, Father practically commuted between England and Italy. He was in Italy when his mother died of a heart attack. Annie Marconi was very old. With a last spark of vanity she had taken to fibbing about her age. No record survived of her birth, but we knew she was over eighty. We children had not seen her since before the war, though Father had visited her from time to time. Alfonso was the son who cared for her assiduously, while she dreamed about Guglielmo. Father, the man who wandered so incessantly from country to country,

was not at her funeral. The past had been dead for him a long time.

The present was, for Senator Marconi, Commander of the Italian Royal Naval Reserve, centered on the *Elettra*. An impeccable navigator himself, he was intransigent in his choice of a skipper and crew for his ship. Captain Raffaele Lauro, a native of Sorrento near Naples, and himself an officer in the Italian Navy, was given the post of captain. A majority of his crew of thirty-one were also Italians. Father was too autocratic to let Lauro be complete master of the *Elettra* without interference and Lauro would flare up when Father stalked off the bridge muttering: "Here, we are not in Naples!"

We children adored Captain Lauro, even when he was stern with us. Properly a disciplinarian, he would never hesitate to order us off the bridge as we were making port or sailing. Peremptorily, he meted out the same treatment to my Uncle Noel, a Brigadier General who, after a flash of indignation, accepted his command docilely. Women found Lauro irresistible. Years later the handsome captain was one reason why many of them were constantly aboard the *Elettra* while we were in Cowes.

The moment the yacht was at last ready for cruising, Father telegraphed Mother to join him in England and we were packed off to the seaside for the duration. The sea always relaxed Father and raised his spirits. Bea hoped that a quiet time together with no one but perhaps Pippo Camperio aboard, would patch up their growing differences.

In this she was disappointed. When she came up the gangplank, she was welcomed not only by Father and Pippo but also by her subtle adversary and her adversary's husband of the moment. Thus the cruise began dismally for Mother. By the time they reached Spain she knew that she was being outgeneraled and emerged from her cabin only for meals. This was a deliciously pretty room, done all in pink with bright English chintzes, directly across the companionway from Father's. She had looked forward to being happy here but instead she felt isolated and as if, were she to call out, her voice would make no sound. Only Pippo, "always the devoted friend, came and paid me long visits, deploring

the situation as much as I did." Father, with the imperviousness of a man who has more important things on his mind than bitterness between his wife and his attractive lady guest, carried out experiments in radio telephony. From the Bay of Biscay he broadcast records of Portuguese songs to the Monsanto station where Portuguese officers, with Solari as an observer, heard them with amazement.

Mother's tension lifted temporarily when they reached Spain. In Seville, during Easter week, she could carry her head high again. Here she was on her own ground, where her rival could not compete with her and she played up her advantage with bravura. Her reunion with the childhood playmate, whom she had known as Ena, now Queen of Spain, was warm and strengthened her hand. The Marconis were invited to lunch at the royal palace and afterward the Queen, like any lesser mistress of a house, took Mother through the rooms and gardens to show her just where, and how, they lived. The two women even climbed down into the dungeons beneath the reception rooms and Queen Victoria Eugenia told Mother that more than one of her predecessors had been consigned to their depths. "You see, my dear," she said with moving understanding, "even the Queens of Spain have been unhappy."

Mother and Father attended a special Easter Week *corrida* and, as one Englishwoman to another, the Queen armed Mother with a pair of "blind" binoculars through which she could seem to watch, without having to see. There were parties, too, and Mother, who could never resist them, was surprised to find her spirits reviving. She had a perfectly beautiful time at a ball that the Duke of Alba gave in honor of his cousin, ex-Empress Eugénie, who had just returned to her native country after many years in England. She was ninety-four and died that same year, but she found childlike delight in the Spanish dancers and singers engaged to entertain her.

The night was warm and the windows of the old palace were open on the gardens where the scent of orange blossoms drifted through the blue Spanish night and the great ladies, wearing high combs in their hair and fringed shawls, paraded.

Mother, very humanly, remembers that as the ladies from the *Elettra* entered the baroque ballroom they were each given a Spanish shawl, an heirloom in the house of Alba, to wear, since modern dress looked amiss in that ancient room. She wore hers with grace and noted that their lady-guest declined the one offered her, that her decolletage was better suited to Paris than to Seville and that her cropped hair caused a great fluttering of fans. It was a small and useless triumph. Father did not notice.

It was their last night in Seville. Before the *Elettra* put to sea in the morning, newspapers were brought aboard. Father, at his eight-o'clock breakfast, let out one of his rare shouts of laughter. On the front page was a story that said he was in communication with Mars.

From Seville the cruise proceeded to Gibraltar, Morocco and, by leisurely stages, to Italy. The Villa Beatrice, where Gioia and Giulio and I were staying, was on the Bay of Naples and the day the *Elettra* was due we were up at dawn to watch her come in. After waiting for hours we spotted the boat on the horizon. Overcome with excitement and fatigue, I fell off the stone jetty, best white cotton dress and all, with an immense splash.

Back in Rome, the symbol and the conventional arrangements of my parents' marriage ended. The house was sold to the Dutch Minister in Rome, Van Royen, who paid, in florins, nearly twice what Father had, two years before. All pretense that Father and Mother were living together was abandoned. We went to the Hotel de Russie, he to the Grand.

One day I walked across the Borghese Gardens. The door of our old home stood open and I went into the front hall. Most of the furniture had been taken away, and in its place were crates covered with dust. In a corner a few books we had once loved had been dumped like so much trash. Lamps with broken shades and letters in my father's handwriting littered the floor. Mother, too sad to attend to the home that was being destroyed, had left the packing to the servants. I still feel grief for myself, a child standing alone in that derelict house.

CHAPTER NINE

In September, 1920, Father had sailed, alone, for Fiume to talk to D'Annunzio. A passionate advocate of Italy's sovereignty over Fiume, he had made himself commandant of the town and given it the prestige of a city-state. At the same time it was a thorn that festered in the flesh of Italy's foreign relations. For a year D'Annunzio had been entrenched in his tiny kingdom on the Adriatic, the sea he ardently believed should be *mare nostrum*. Nitti had once more called on Marconi as an old friend of D'Annunzio and, using the heretofore infallible appeal to his patriotism, asked him to persuade the soldier-poet to leave Fiume. Father decided to follow nothing but his own conscience. He would go and see for himself what he judged right but he declined to make a commitment.

When the *Elettra*—"the shining ship that works miracles, penetrating the silences of the air," D'Annunzio called her—came into the harbor of Fiume on the twenty-second, an uproarious greeting rose from crowds on the waterfront led by D'Annunzio. For two days these friends, the one all fire and poetry, the other contained and scientific, talked with deep understanding based on their mutual dedication to Italy. What they said has not been recorded yet their parting clearly bespeaks the decision Father reached.

Before the *Elettra* left port, D'Annunzio spoke to the people of Fiume from the Palazzo della Reggenza with Father standing beside him. What he told them was that Fiume, above all things, wished to remain Italian. To seal the understanding the two men had reached, D'Annunzio gave Father a farewell gift, slightly ludicrous and altogether symbolic. Himself supervising the stevedores, he had a machine gun hoisted onto the deck of the "miraculous" ship. So they parted.

That winter of 1920–1921, Father was involved in setting up short-wave radio stations in England, as a result of developments he had made and with a radio-beam aerial designed by his colleague, Charles Samuel Franklin. The *Elettra* was laid up at Southampton, her home port. When summer came Father sailed for Italy, bringing with him Mother's youngest sister, my Aunt Dorrien, Mrs. Richard Coke. The yacht anchored in front of Villa Beatrice, which we had taken again for the season and, along with Aunt Lilah and her painting paraphernalia, we set out to cruise down the coast to Amalfi and Taormina and Messina in Sicily. Then we were to sail round the heel of Italy and come up along her eastern shore to Venice.

Giulio honestly believed that the yacht was his Christmas toy ship come true. He hung around the bridge, sometimes allowed to take the helm. He made friends with all the sailors, chattering like a magpie and even loitered near the wireless cabin door expecting to be asked in. He seldom was.

I was enchanted by the *Elettra*. The sounds of the ship were invariably set against the rhythms of the sea, and the smells of the ship were permeated by the smell of the sea. From the wireless cabin rose the insistent odor of chemicals. From the chart room came a pungent, acid scent I have never been able to account for, and from the galley floated the comfortable odor of good food. Inevitably the small main saloon or, as we called it, sitting room, smelled stuffy.

The sitting room, with its depressing closeness, we were inclined to avoid, except when Father sat down to play the piano. Then we came and begged him for bits of *Bohème* or *Madama Butterfly*. Yet nothing made it a friendly place with its dark,

walnut-paneled walls hung with framed photographs of kings and queens, looking down on us condescendingly. Moreover, it was situated forward in the ship, where we felt the rise and fall of the sea most strenuously.

I loved the dining saloon because it was the biggest room of all and amidships where generous windows looked out across the narrow deck to sky and sea and land. Comfortable chairs were ranged around the big table where I could spread out a puzzle, lose myself in a book or lure Giulio into a game of dominoes. We had two small cabins, he and I, neat and bare of furbelows. The first time he showed them to us, Father explained that they were our very own and we felt excessively proud. Mother's was far larger and Father's matched hers, but we considered his far finer for it was Wedgwood blue and white, tidy as a clean plate. Our Aunts occupied two of the guest cabins. Lilah's was pale and luminous green, and we dropped in with tactless regularity to see, we said, how her latest water color was getting on, but with the baser purpose of cadging sweets.

Father was more often than not in the wireless cabin. "I used to have to pretend that I liked fishing in order to get off by myself and think," he said after he bought the *Elettra*. "Now I don't have to pretend any more." (It is one of his few statements that I doubt. I think he had simply forgotten how contented he was as a little boy at Pontecchio with a rod beside a brook, luring shy trout to the surface of the water.)

To us children that summer he seemed just like Father, abstracted as he always was, prim in his manners yet approachable and a dear companion. Our elders contrived to put a good face on things, and in doing so succeeded in leaving us at peace, with our gaiety intact. Mother, with her adored sisters aboard to recreate her feeling of belonging which Father had so seriously impaired on her previous cruise, was happier than she had been for a long time. Though it was built on shifting sands, the illusion of family solidarity surrounded us all for a few golden weeks. Certainly she never looked lovelier. Even I, convinced at all times that she was perfect, saw her shine as I never had before. I made it a point to race through changing from the cottons I wore all

day to the silk dress required for dinner so I could go into her cabin and watch her. Sitting at her dressing table, powdering her fair face and neck and arms with little leaves of faintly perfumed rice paper, and brushing her gleaming, thick hair she was, I felt lovingly, a fairy queen.

Despite the inescapable changes in our parents' relationship, we clung to the idea that our world was really unchanged, and pretended to ourselves that it was as unchangeable as the rocks we saw rise from the sea of Sorrento.

On that cruise there was none of the deadly monotony that often overtakes people at sea. We were constantly putting into new places, swimming in coves where the water shaded from the shallow hues of a cloudy opal to the deep green of emerald, walking up the hills through sunny meadows, carrying a picnic lunch to be eaten among Roman ruins overlooking the sea. When we settled down, Father would tell us stories from the history of the place, making them sound as if ancient events had happened yesterday. We stopped for two days at the Tremiti Islands because Captain Lauro, a keen shot, wanted to see what game he could bag. Father, still no huntsman, had no objection to Lauro's sport and while he banged away we went for long walks and bathed in water as warm as that in our tubs. Thanks to the captain's good aim, we ate wild pigeons on the following nights.

The ship stopped at Francavilla and we went to visit the painter Michetti, who came through the foaming breakers in a speed boat to meet us. On shore, friends from the Abruzzi were waiting in his garden and our afternoon took on the aspects of a wonderful party. As a routine matter, Michetti showed us the paintings in his studio but he could hardly wait for us to be done with them so he could go on to his real love, electrical gadgets. His delight in electricity was undoubtedly one source of his affection for Father and he wanted to show off what he had done. The house was fully wired and beside each bed was a complicated control box by means of which you could switch on lights and ring bells. Father whispered to me, after he had marveled politely at these ingenious uses of power: "Look at Michetti! A genius of a painter who wastes his time with contraptions."

Afterward, as the late sun was setting, we ate a supper of cannelloni and fish fresh from the sea, and drank wine pressed from enormous golden grapes while we looked out at the *Elettra* from under the vine-clad loggia.

Father and Aunt Dorrien went on to Venice while Mother and Aunt Lilah and we children drove from Francavilla to Naples, with one of Michetti's sons to look after us. The dreadful, pocked roads wracked the Rolls and nearly broke our backs.

Though the cruise had, superficially, seemed so merry, the undercurrents of dissension still ran strong between Mother and Father. A severe jolt was administered to their relations a few days later when, quite unexpectedly, Aunt Dorrien arrived back in Naples. She had known nothing of the "other woman" in Father's life so she had been badly shaken to find a strange lady waiting on the dock at Venice. My aunt abandoned ship as quickly as she decently could and arrived at Villa Beatrice in a rented car, furiously wanting to know what was going on and why she had not been told. The reason, Mother explained, was that the less she seemed to know of the affair, the better were her chances of getting Guglielmo back when it had worn itself out. The idea appalled her sister. Very continental, I'm sure, Bea, I can hear her say, but *I* certainly wouldn't put up with such a kettle of fish. She left for England worried and disapproving.

Mother sailed only once again on the *Elettra* and that was briefly. Princess Elsie Torlonia, a great friend from Rome, was making an earnest effort to patch up what Mother calls "our strained relations" and in the course of the campaign, the Torlonias persuaded her to spend a few weeks with them and their children at Houlgate, on the Normandy coast not far from Deauville. Their hope was that Father would come over from England and occasionally he did, though he never stayed more than a day or two at a time.

We didn't much care for Houlgate. It seemed dull, cold, and gray compared to the more brilliant, warmer water of the Mediterranean and the Adriatic. Donna Elsie took Mother to Deauville —it was the height of the season—to dinners and dances. They failed to cheer her. The brightest moment of our stay from my

standpoint was when the proprietor of our hotel, a vast, charmless pile fronting the beach, offered prizes for the handsomest sand castles. Between us, we, the Marconi and Torlonia children, joyously raked the booty in. Some of the other children's castles were far sturdier and more ambitious than ours but the prize-giver was Italian and what is more a devotee of Father's. We could not have lost if we had tried.

Before the equinoctial gales were due to set in, Father arrived at Deauville aboard the *Elettra* to take us home. The weather was at first fair, the sea smooth as far as the Bay of Biscay. There a real storm caught us. Much as I loved the sea, I was not up to this assault and I lay in my bunk, refusing all offers of food for two days. Resorting to the treatment that was efficacious when I was carsick, Mother and Father hauled me up on deck for a breath of the windy air. They started, one supporting me on either side, to trot me up and down the heaving deck. I looked from one to the other, mute and reproachful, then, to their alarm, fainted. All else failing, Mother and Father resorted to the cure prescribed by Lauro—champagne. Father had to force it between my stiff shut lips, but not for long. After one gulp I began to revive and took my medicine with avidity. The cure was complete and after Gibraltar the weather was gentle. We stopped at Viareggio where Puccini came aboard and the following day we visited him at his house at Torre del Lago where he played parts of *Turandot* for us. A few days later Father left us at Villa Beatrice and continued on his way.

The beach near Naples was everything that Houlgate was not. "What glamour!" Lilah exclaimed when she saw it, "after the dull Channel skies." Protected from the ocean by a stone mole, the harbor was dotted with white sails and bright-colored boat awnings. Gangs of children and yapping, excited small dogs splashed in the shallow water.

Daily a crowd of friends gathered to swim at the Villa Roseberry whose owner had lent it to the British Ambassador. Here we would see the Mayor of Rome, brown as a rajah, eating cockles with his small nephews who darted into the water like eels, pretty girls alternately diving and sunning themselves on the sand,

young boys ducking each other in the glassy water. And it was here, one day that Beatrice's life was changed for good and all.

Mother was thirty-eight that summer. The pretty girl from County Clare had become a strikingly beautiful and cosmopolitan woman. A man who had seen her just once in New York at a great party asked Aunt Lilah about her because he could not forget how she had come in "radiant like the rising sun." Her discretion was not less admirable than her beauty. Another friend of my aunt's testified: "I was for three years in the same hotel with her and her children and all that time I admired her reserve and constraint, the way she kept herself to herself and sheltered her small family. She allowed none of the corruption of Rome to touch her or her small family, and indeed Italy, for a young woman alone, offered many temptations. Not many women withstood them as she did."

Father had, of late, been anything but a model of discretion. His affair was no longer a secret, anywhere. Indeed it was reaching the proportions of a small scandal, despite Father's loathing of that word, and it was only remarkable that Aunt Dorrien was so naive that she had heard nothing of it. Practically everyone else in her world had. Even the newspapers made insinuations of the Marconi-and-a-certain-lady variety. The blatancy of the adventure robbed Mother of her last line of defense—the pretense of ignorance.

Precisely when Father's and Mother's relations had reached this pass, Mother took us swimming on a hot September day and on the beach of the Villa Roseberry, she met her next-door neighbor. He was summering in the Villa Emma, where the divine Lady Hamilton used to keep her trysts with Nelson. The Marchese Liborio Marignoli fell in love with Beatrice as promptly as Marconi had and, knowing how rocky her marriage was, did not hesitate to ask her to marry him. With the decorum which she had mastered through hard and frequently lonely years, my mother declined his offer. He was disappointed but not defeated. Marignoli decided to continue his siege, on the chance that one day this lovely, rejected woman would be his.

CHAPTER TEN

I was growing up and I could hardly have been unaware that, delightful though I always found my father when he was with us, he came less and less often. The gaps between his arrivals grew longer and the spans of his visits shorter. Feeling uncomfortably that something was very wrong indeed, I hated to ask my mother what the trouble was as if, in doing so, I would make real what was perhaps only an uneasy dream.

Mother, for her part, did not discuss the situation with me, though sudden bursts of tenderness were, I think now, elicited by her knowledge that I was perplexed and frightened. She was attempting to make up to me for my father's lacks as a parent.

What she herself was going through she kept concealed, as convention and her own feelings dictated, from everyone but Aunt Lilah. Mother had fought to preserve her marriage, accepted humiliation, and was prepared to agree to any reasonable settlement that was offered her. Lilah knew this. One Sunday night, Father took her to a concert at the Augusteo in Rome. Her attitude, always previously friendly, was so constrained he asked her what was on her mind.

Lilah answered honestly. As he well knew, she had always been loyal to him, but in the face of the scandal he had caused, she could no longer find excuses for him.

My father, still in the grip of his passion for the woman he thought he could not live without, did not answer. But Lilah says that drops of perspiration ran down from his brow. He had complained only a few minutes before of the cold. I see now that he was a man tormented and, what was always terrible to him, trapped in this relationship, when all he wanted was freedom to be himself and to be alone.

Despite his emotional conflicts, Father did daring and demanding work during the next three years. Beam, or short-wave, wireless was about to supplant the older long-wave system which had occasioned disappointments and delays in girdling the earth and linking its countries. Finding time to make the theoretical investigations on which his contributions were based was endlessly difficult. On May 27 Father guaranteed himself at least two weeks alone. He sailed aboard the *Elettra* from Southampton for New York. Though she was small for a transatlantic crossing, Lauro foresaw no trouble for his ship if he stuck close to the sea lanes used by liners at this time of year. The *Elettra*'s bunkers carried a fifteen-day supply of coal.

In mid-Atlantic, the sky turned black and ugly and a mighty wind hit the 730-ton craft. She was tossed and buffeted with such violence that Captain Lauro and Father agreed on the wisdom of changing course and heading for Bermuda. When the gale abated they could run up the coast and into New York. Speed was cut to half and water rigorously rationed for all aboard. What the crew must have considered hardship, Father took as a golden gift. He had two extra weeks to work at sea.

Certainly he was in high good humor, a month out of Southampton, when the sirens of the New York harbor tugs shrilled greetings and newsmen in small boats trailed the *Elettra* to her anchorage off the Columbia Yacht Club at the foot of Eighty-sixth Street. A week later she left her mooring and headed up the Hudson toward Schenectady, the home of General Electric's House of Magic and some of science's greatest minds. It was a triumphal progress with knots of people waving Italian flags gathered along the banks to see the famous floating laboratory pass. As the *Elettra* neared Albany a boatload of monks in cassocks pulled

away from the shore with the red-white-and-green Italian colors fluttering in their hands.

Father was shown everything that was being done. In laboratories crowded with strange instruments he talked to Irving Langmuir, the man whose researches were largely responsible for the vacuum tube used in radio. With Charles Proteus Steinmetz, the bright-faced dwarf, he discussed the method of calculating alternating-current phenomena and the laws governing the loss of power due to magnetism. At this time Father was starting to show the first subtle signs of age. He was still dapper but beginning to be paunchy, his shoulders slack. Small wrinkles edged up from his eyes. The forehead was higher, the hair thinning. Only the hands were as strong and vital as ever.

Marconi was back in New York on June 20, 1922, to address the American Institute of Electrical Engineers and the Institute of Radio Engineers. He put on a dazzling show for this august body. With a miniature transmitter projecting waves the width of the stage from a reflector to a horizontal rod, he read a speech that blazed new trails.

Since the war, important steps had been taken by C. S. Franklin who had set up a telephone circuit between London and Birmingham using 15-meter waves. At the same time, American and British amateurs organized a test to find out whether the "commercially useless" wave length (200 meters) assigned to them could span the Atlantic. The test failed, but a second one was nevertheless tried and, in December, 1921, amateur call letters were identified in the British Isles and a station in Greenwich, Connecticut, succeeded in transmitting a complete message.

However, failure was complete as the sun rose along the Atlantic path and interest in the whole idea died. Major Edwin Howard Armstrong, who had helped build the Greenwich station, now assisted in dismantling it. "Marconi seems," he later wrote, "to have been the only man in the commercial field whose imagination was fired with the spanning of the Atlantic by the stations of amateurs." In Father's June 20 paper "he suggested that radio perhaps had gotten into a rut by confining practically all its research to the long waves; and he summed up his remarks on the

subject with these prophetic words: 'I have brought these results to your notice as I feel—and perhaps you will agree with me—that the study of short electric waves, although sadly neglected practically all through the history of wireless, is still likely to develop in many unexpected directions, and open up new fields of profitable research.' "

Marconi also affirmed his faith that the potential of electrical waves was limitless, and suggested one such new field:

> Before I conclude I should like to refer to another possible application of these waves which, if successful, would be of great value to navigators. As was first shown by Hertz, electric waves can be completely reflected by conducting bodies. In some of my tests I have noticed the effects of reflection and deflection of these waves by metallic objects miles away.
>
> It seems to me that it should be possible to design apparatus by means of which a ship could radiate or project a divergent beam of these rays in any desired direction, which rays, if coming across a metallic obstacle, such as another steamer or ship, would be reflected back to a receiver screened from the local transmitter on the sending ship, and thereby immediately reveal the presence and bearing of the other ship in fog or thick weather. One further great advantage of such an arrangement would be that it would be able to give warning of the presence and bearing of ships, even should these ships be unprovided with any kind of radio.

Here was the idea of radar which gives us safe conduct in ships and planes today.

For a few days Mother and Father were together in New York. Mother had come over to visit friends in Boston. She was so estranged from Father she had hesitated to ask him for the fare and suggested traveling tourist class, but he insisted that she have a first-class stateroom on the *Mauretania.*

Orrin Dunlap records that, as Father had pressing engagements in England he had returned not on the *Elettra* but on the *Mauretania* with Mother. It is melancholy, I think, that only by force of circumstances did my parents make this last ocean crossing together.

That return voyage to England was not without excitement. To a London *Times* representative who interviewed him at Marconi House shortly afterward, Father said: "When I was approaching England, and when I was expecting to receive important messages, I was surprised to find that nothing was reaching me. I could not make it out. On arrival here I found that Clifden Station had been seized by the Irish revolutionaries, and some of the buildings burned. The staff were expelled. I understand that the main buildings have not been damaged, but minor ones have been destroyed. It is hoped that control of the station will soon be regained."

This drama dismissed, he talked about experiments made at sea. The storms that had plagued the ship gave him a blessed chance to study the behavior of atmospheric disturbances.

That summer of 1922, Mother took us to Baveno on Lake Maggiore where we stayed in a hotel that had just opened. As it was owned by the manager of the Savoy, Mr. Soy, where Father always stayed when he was in London, we were royally treated. Father had begun going to the Savoy because it was only five minutes walk from Marconi House in the Strand and he could come back to the hotel comfortably for lunch each day. The head waiter reserved a table for him near the entrance to the dining room where he could watch the comings and goings, and the room clerk saved him a suite on the Thames side of the house. Often alone in the crowd, Father was achingly lonely at this time. Except when he was engrossed in his work, he was a lost, unhappy man. That summer while we were at Baveno he spent just one weekend with us.

In September we moved on to Viareggio, then to Florence, where the Pensione Gonnelli was, after our house in Rome was sold, more or less home. That October the *Fascisti* marched on Rome and the King sent for Mussolini to form a cabinet. This affected us not at all.

At fourteen, I was now fully aware that Father almost never came home any more, that our Mother planned our lives without consulting him and that, to all intents and purposes, he was no longer one of us. Little Manchu's instinct had not been far wrong.

Yet for a little while longer I did not realize that my parents' parting was complete and final.

Early in 1923 Mother, as lady-in-waiting, was requested to attend Court, which she had not done for several years. The occasion was the state visit of King George and Queen Mary to the King and Queen of Italy. At a state dinner and ball at the Quirinal Palace Queen Elena took occasion to say of Mother to Queen Mary: "We do not see half as much of her as we would wish but she has come this time in your honor." She well knew why Mother was often absent. I have been told by people who saw Mother that night that she looked unbelievably lovely but Aunt Lilah reported that she was so heartsick she could hardly drag herself through the evening.

When Mother returned to Florence, the Marchese Marignoli renewed his courtship. She was touched by his persistence, as she had been at Father's more than twenty years before. Her Irish nature, hungry for love and sympathy, began to respond to this ardent, handsome man. Quite humanly, she longed for affection that had been denied her, for home life that for her had ceased to exist, and for the close ties of companionship she had grown up to believe essential to a good existence. She had been drifting for a long time and now here was the promise of recapturing the security she craved. As the months passed Beatrice Marconi allowed herself to fall in love.

Father seems to have been curiously unaware of what was transpiring in Mother's heart. His experiments with short-wave wireless were going forward and in the course of them he set out on the *Elettra* for the Cape Verde Islands off the coast of Africa. In a packet of letters that has survived the years, I find one dated June 6, 1923:

> Dearest B,
>
> I have had a most wonderfully successful trip to Cape Verde, in the tropics, and the results have been truly remarkable and well worthwhile the time and money devoted to them. We can now do distances of 25,000 miles with one-tenth of the power required before, besides being able to send messages in one direction only.

He still believed her dutifully concerned over his work and, indeed, he was right, for in the years that followed she was never able to erase her concern for him from her mind. But how matter-of-factly he took her for granted!

During the cruise he received signals from a beam transmitter he had set up at Poldhu using a wave length of 97 meters. Again daylight signals disappeared (at 1,400 miles) though at night he got far better reception at 2,500 miles than he had previously received over such a distance from a long-wave station. The signals, he noted, lasted for a time after the sun rose at Poldhu and came in again before darkness fell over the islands.

He suspected some phenomenon, as yet unaccounted for, was present in the short-wave band and after returning to England laid out a program for further experiments. This took him, in September, 1924, to Beirut aboard the yacht and in the harbor he was astonished to receive signals on the 32-meter wave length from Poldhu, 2,400 miles away, throughout the day.

Marconi acted at once on his return to England, scheduling transmission to Argentina, Australia, Brazil, Canada, and the United States. All were brilliantly successful. Long-wave transmission had been rendered obsolete with his discovery of the "daylight" wave. Marconi became one of those few men who make two basic discoveries.

As a result, there were great business affairs to be consummated. In July, 1924, Father signed a contract with the British government in which he undertook to supply high-speed commercial service to all parts of the empire, under such stringent conditions that Vyvyan said: "The Marconi Company found itself in a position where it was essential to take enormous risks and give guarantees of performance for the effective working of a new system that had as yet never been used on any commercial circuit." So new, indeed, that the building of a vastly costly station in South Africa, where four 800-foot masts had already been erected, was halted and the Wireless Telegraph Company of South Africa contracted for the substitution of a beam station.

At the height of this intensive pioneering, in 1923, Mother asked Father for a divorce. It was the last thing he wanted, little

though he had honored his familial obligations in recent years. He was free at last, his lamentable affair ended. I do not believe it ever occurred to Guglielmo that Bea would not be waiting for him when he was ready to come home. Yet he was, alas, too proud to come to her now, hat in hand, and ask her to stay with him. The tragedy is that he was sorry forever after that he did not, and told Solari so years later.

Before the irrevocable step was taken Mother went again to Rome, this time to resign as lady-in-waiting and to return the diamond E, the badge of her position that she had worn so radiantly. The Queen was a sympathetic friend who knew that though Mother was, in the eyes of the world, ending the marriage, Father had paved the way she had decided to travel. Understanding this, Queen Elena said: "A man like Marconi should never marry."

Mother agreed. The proof lay in the twenty years she had spent with this fascinating, infuriating man. Yet she was deeply troubled at what she was doing. She kept her courage up by telling herself that we children, whom she loved unreservedly, would have stability in our new environment, a proper home that would be better for us all. As for us—I was nearing sixteen, and Giulio was close to fourteen—it was already too late. We were too old to feel at home in another man's house.

Pippo Camperio, the indefatigable go-between, arranged the "terms" between them, centering on the fate of us three young ones. It was all worked out amicably. Our time was to be divided between Mother and Father and he was forbidden ever to remove us permanently from her. As it turned out, we spent the school months in Italy with Mother, our summer holidays on the *Elettra* with Father.

In order to minimize publicity, Father and Mother went, separately, to Fiume, a free city, established residence there, and were there granted the freedom that neither one entirely wanted. Father knew the date on which Fiume would become Italian and when that happened both my parents automatically regained their Italian citizenship. Mother married Liborio Marignoli shortly thereafter and we went to live at his country house in Spoleto.

While outwardly accepting the divorce and the remarriage of his "B," Marconi seems to have erased this inconvenient fact from his mind. Everything was as usual. His letters continued. He was in all ways considerate. Our allowances were generous. Our problems, if any, were discussed in frequent meetings between our parents. Father went right on consulting his ex-wife about anything that bothered him, perfectly unself-consciously.

In the spring of the year, with our final examinations behind us, Giulio and I traveled together to England (it was felt better that Gioia stay with Mother until she was older) and stopped for a few days at the Savoy. In the mornings we embarked on long sightseeing tours, in the evenings we went to musical shows on tickets wangled from Father. As soon as he could get away from business, and it could not be soon enough for us, he drove us to Southampton, crammed into his Rolls two-seater and we embarked on the *Elettra*. Father had carefully laid out plans so that we could loaf along the coast of Devonshire and Cornwall, cruising ground we loved, then to Vigo and Lisbon and Madeira, while he worked all the time. Giulio says: "During the two months I was on board I cannot remember him once commenting on what he was doing or showing the slightest outward sign of satisfaction or otherwise at the results. I was fourteen at the time and I used to observe my father with interest but neither I nor the guests on board could get an inkling of what was going on." Giulio got on beautifully with Father, except when he was late for breakfast, when "I would be received with a cold glare and if I asked for anything on the table he would unwillingly allow me to have it. Nothing was openly said but he would hardly talk to me for the rest of the day."

In August we were back in Cowes for Regatta week. Father, who took most of the honors that came to him in stride, felt particular pride over having been elected a member of the Royal Yacht Squadron and pointed out that ours was the only yacht flying both the white ensign of the Royal Navy and the tricolor with the crown of Savoy.

On August 12 he wrote:

Dearest B,

I have not been able to write you from Cowes as I was kept so very busy with all sorts of things and had never a moment to myself.

The children enjoyed themselves hugely and their stay on the *Elettra* has really done them worlds of good. Am sure you will notice a great difference when you see them again. I have taken them on many trips by car, and today we went to Eaglehurst.

The people at Cowes were very nice, and I dined with the King and Queen on the Royal Yacht, and a few days afterward with the King at the Royal Squadron. Lots of people, including the Queen, asked very nicely after you. . . .

With love to you and Gioia
Affectionately
Guglielmo

What a social life that was for two youngsters on vacation! The "people at Cowes" to whom we were exposed gave us a taste of the brilliant conversation of the Earl of Birkenhead, the charm of Bordonaro, Italian Ambassador to Great Britain, the impressive presences of newspaper proprietors like Lord Camrose and Sir Gomer Berry (Lord Kemsley). And always there were lovely women—Diana Theodoli, Christina Casati with her violet eyes, pretty Poppy Baring, Constance Bennett, and Mary Pickford. I was at the age to think that Douglas Fairbanks was the most glamorous guest we had and Giulio was reluctantly inclined to agree.

The pattern of that summer was repeated more or less seriatim in the years that followed, though the cruises took us to different places and there were always new faces.

On August 13, 1925, Father wrote another of his intimate, friendly letters to Mother. This one stunned her. "Don't be surprised," he said, "or upset if you hear I have become engaged to Betty Paynter. I care for the girl an awful lot, more than I ever thought I could, and she for me. I have been fighting against myself over this for a long time, but I am afraid it's no use. After all even you know how lonely I am. She is an only child. There

would, of course, be no question of settlements from me or anything of that kind if I married her." This was inserted, clearly, to assure Mother that our interests would not be jeopardized.

Betty Paynter was seventeen, my age, and Father was fifty-one. Mother received the news with dismay and replied with unaccustomed frankness and sharpness—and pardonable bitterness: "I am surprised to hear you have decided to take the step you write me of in your last letter and create new ties and most probably a new family. I would like to wish you every happiness but this news distresses me for I wonder after all the years we were together when your own desire expressed continually was for freedom to concentrate on your work as your family impeded and oppressed you, why you should suddenly feel this great loneliness and need of a home—this craving for fresh ties!! These ties were eventually what broke up your home and ended in our divorce. I fail to understand."

So distressed was Father by Mother's reaction that he telegraphed her at Spoleto, asking her to meet him in Florence to talk it over. At their rendezvous he asked her both what she thought of his engagement and what people were saying about it. Beatrice wanted to know why he consulted her on so delicate a matter and he replied: "Because you are the only person in the world who will tell me the truth." I am certain that she spoke to him strongly about the pitfalls inherent in the course he had chosen.

Her alarm was premature; the thirty-four-year difference in their ages could not be evaded. The engagement was broken by mutual consent.

At the end of each summer Father brought us back to Italy, anchoring his ship in the then unspoiled and wholly enchanting harbor of Viareggio. Little boats called *pattini* clustered around the ship as we arrived and visitors streamed aboard to admire, gawp, and all too often steal the silver for souvenirs. Even on holiday at the seaside Marconi was the target of crowds who pushed in around him unless he managed to sneak off to a secluded bit of beach. Once when we got off the launch and onto the pier the mob was so dense we had to jump into a small carriage—a

carrozella—to escape. For a panicky moment we felt we were being suffocated.

Father was, at this time, utterly devoted to us children, I honestly believe, but his mind ruled his heart—as quickly as he concentrated on us, he could forget us. His loneliness, so real and deep, came from the streak in his nature which shut out everything but the immediate present. It was, I am sure, unconscious self-protection, his ability to black out all human responsibilities when his higher destiny, or a veering in his mood, impelled him.

One day that first summer at Viareggio made us aware of this strange characteristic. After lunch on the yacht Father was taking the launch to town and he asked Gioia, the adorable, chubby six-year-old on whom he doted, if she would like to go with him. Gioia was rosy with pleasure at being singled out and went off happily in her bathing suit, clutching a shovel and pail to use on the beach. Later in the day he returned on the launch with some friends. He had forgotten his youngest daughter.

Gioia had a blissful afternoon and it was only when she began to be hungry (she was much addicted to food) that she looked up from her sand castles and saw that the beach was deserted. However, there was no problem, from her point of view. She could see the yacht clearly from where she stood, and to her optimistic and famished eyes it looked close enough. She was just learning to swim.

The water was choppy and it was only by chance that Baby Gregorini Colonna, returning from the *Elettra* in a *pattino,* saw a brown head bobbing uncertainly in the waves. When she hauled little Gioia out of the water, the child was water-logged, exhausted, and ready to sink. Baby, white with anger, rowed to the yacht and on the deck she told Father what she thought of him as a man and a father.

He stood, holding his shivering child's hand, shocked beyond speech. Baby did not have to tell him that he had nearly caused Gioia's death.

CHAPTER ELEVEN

Like many another parent, Marconi was eager for his son to fulfill those ambitions which he himself had failed to realize. At Giulio's age he had wanted nothing half so much as to make a career in the Navy. Therefore it seemed to him of the utmost importance that Giulio become a Navy man. It stunned him to learn that his son did not share this ambition. As he wrote Beatrice on November 9, 1924:

> I arrived in London after a very good journey and have been pretty busy ever since.
>
> I have received a letter from Giulio in which he tells me that he has passed all his exams, which I am delighted to know, but at the same time he tells me he would prefer not to go to the Accademia Navale as he says: *"Non mi sento affatto attratto dalla vita di mare."* [I don't feel at all attracted toward sea life.]
>
> This is quite a surprise and a great disappointment to me. . . .

On the strength of this, Father made a special trip from London "to talk things over" with Giulio. The boy yielded to his arguments and on March 14, 1925, Father wrote to Mother:

> Giulio has told you, I am sure, of his decision to try and get into the Naval Academy after all.

I am awfully glad because I feel that whatever he may wish to do afterwards the Acadamy will give him the best all round education.

He came to this decision on his own, without the slightest pressure from me, after I had explained to him the pro's and con's of both courses. I am so glad he has decided to go into the Navy, as I am much more in touch and sympathy with Naval officers than with university professors! and I will be able to understand and follow his career much more closely at the Academy than elsewhere.

At the same time, Father felt as capable of managing my life as Giulio's, though I never knew a man who understood less about women. He decided that I was alarmingly shy and studious and that being sent away from home would cure me:

I have also been doing a lot of thinking about Degna and cannot help thinking that a year in a good school in England or France where she could get plenty of outdoor exercise and fun would do her worlds of good in every way and greatly improve her chances in life. . . . She so often looks sad, poor darling, and is so terribly shy of people.

It did not occur to him that I had reason to retreat into myself, that my face reflected the fact that my personal world was in ruins. He proceeded to the precise prescription for my undiagnosed ills in a letter from London dated September 5, 1925:

Dearest B,

I am writing you very briefly as I have been and am most awfully busy with important work. In regard to Degna, I think it would be a great pity if she should not go to the Ozanne School in Paris, and will be glad if you will come to think the same way. . . .

Needless to say, I did attend the Ozanne School. While I was there Father came several times to give me the "fun" he felt I needed. Those were, in truth, gala occasions, especially when he brought Giulio along. We went one night to see *The Merry*

Widow, which was the rage of Paris. He took me to the galleries and out to Bagatelle when Marie Antoinette's rose garden was in bloom, and to see our old friend Minnie Gregorini, now Princess de Beauveau, in her elegant apartment in the Rue St. Germain. My Paris year turned out surprisingly well and in all fairness it may have been just what I needed. There were the usual schoolgirl problems, of course, and Father wrote Mother in October:

> Dearest B,
>
> I got back here all right, but since my return have been most frightfully busy. As you know, while in Paris I went twice to Dr. Hipwell (once with Degna) about Degna's teeth.... I'm ready to do anything possible for the child, even should it cost a great deal....

In November the problem of my teeth still loomed large:

> Dearest B,
>
> I have now heard from Dr. Field about Degna's teeth and I am sorry to find that he and Dr. Hipwell of Paris don't quite agree as to what should be done....

There follow four pages of what the two doctors say and Father concludes:

> I am very much at a loss as to what to do. If we decide for the operation, I can arrange for it in Paris, and go over there whilst it is being done....

Eventually the operation was done and Father was as good as his word about coming to see that all went well.

Early in February, 1926, Father's attention turned to Mother:

> Dearest B,
>
> Am delighted to hear from a letter just received from Giulio, that a baby girl has arrived and that you did not have too bad a time.

I was really very anxious about you, but am now really relieved to know that it is over, and feel sure everything will be all right.

With congratulations and best wishes, and best love

Ever your affectionately,
Guglielmo

Father came to Paris at the beginning of my Easter holidays and together we traveled to Rome. At Spoleto I saw my half sister, Flaminia, for the first time.

The year 1926 was in many senses a year of anniversaries for my father. Fittingly, he returned that July to the city where he was born. My cousins, Giovanni and Pietro Marconi, met him at the railroad station when he arrived and they remember that half of all Bologna was there to greet him with warmth and affection.

On July 13 he was received at the ancient university by the Rector and the whole learned faculty, impressively arrayed in their traditional robes of silk and ermine. The pageantry in the Renaissance courtyard was resplendent and as he came into the Aula Magna, it echoed to cheers.

Discarding the notes he had made for his speech, Marconi, deeply moved, spoke simply and from the heart as a citizen come to give an account of his life and work during the fifty-two years since his birth in the house with the high windows close to the Cathedral.

His working life, Guglielmo Marconi told his fellow townsmen, had been made up of ten-year cycles. The first important one ran from 1896 to 1906—from the age of twenty-two to thirty-two. Like a fever chart, it was high in 1896 when he took out his first patent for the invention of wireless telegraphy, and dropped in 1899 when he came to what seemed insurmountable difficulties because of the theory that electric waves could not overcome the curvature of the earth. In 1901 it rose again with the success of sending the first message across the Atlantic.

The next period, from 1906 to 1916, was illuminated by the advancements made possible with the invention of the thermionic valve by Fleming and for him the high point was in 1912 when, after the sinking of the *Titanic,* the world realized the supreme

value of wireless for saving lives. Personally, too, his financial burdens began to lighten.

In the third period, from 1916 to this day in 1926, the line on his fever chart moved upward again when he saw that long waves were "taking us down a blind alley." He said, "I foresaw that the future of radio lay in short waves and reflectors. It took courage to go back, after the expenditure of vast sums of money on long-wave stations, but the people of Bologna will not be surprised because they too, after building one of the highest towers in Italy in the Middle Ages, the Torre degli Asinelli, did not hesitate to build a much smaller one close to it. I had to do the same, near the great cumbersome long-wave stations I built small short-wave ones.

"This year marks one of the most important milestones in the history of radio and I am proud to be able to announce it from my home town."

In this hour of truth and evaluation, he made a profession of his faith and his philosophy: "The more a man bends the phenomena of nature to his will the more he discovers and the more he will continue to discover. Because of this he will increasingly realize the infinity of the Infinite."

He had still much to do to bend the phenomena of nature to his will. At the end of July there were difficult tests to conduct for the British Post Office, the most hazardous of them during the second week in October. As a result, the officials were completely satisfied and wireless stations at Bodmin and Bridgewater were opened to the public for traffic between England and Canada on October 24, while others were inaugurated shortly thereafter for wireless communication between Great Britain, India, South Africa, and Australia. As he had announced in Bologna, this was an auspicious year for Father.

The demands on Father's time were incalculably heavy, yet this year we saw more of him than we had in a long time. My parents had decided that I was to come out in London and, since I was eighteen, this was the time to do it. After long weighing of whether Mother and I should establish ourselves for five or six months in

a house or a flat, Father, who did not propose to stint on this social enterprise, took a suite for us at Claridge's Hotel.

It was with great pleasure that we found him dropping in to see us frequently and often staying for dinner. He would have liked to take us downstairs to the dining room but Mother thought this indecorous in view of their divorce, so he joined us in our sitting room. Even so, the Italian waiter, who came to take our order the first time this happened, was unable to conceal his surprise. Sometimes Uncle Donney was with us and the two men would sit together after dinner talking business until all hours and listening to the newest radio set which Father had brought with him.

Among Mother's many letters from Father was one that he had written from the *Elettra* at Gibraltar about a year and a half before my London season in which a new name appeared.

April 5, 1925

Dearest B,

I am sure you will have been surprised at not hearing from me for so long, but after I left Monte Carlo, I caught a very bad cold with fever and have stopped here waiting to get well before sailing for England. I took over from Civitavecchia to Monte Carlo Don Clemente del Drago and his wife Giacinta, who is awfully nice, and was a Ruspoli before her marriage. Also Maria Cristina del Drago, Cristina Bezzi-Scali and Count Manasei. It was a very nice party, and I was sorry to leave them....

Cristina Bezzi-Scali, a quiet and serious girl with fair hair and blue eyes was the antithesis of the gay and sophisticated women Marconi cultivated at that time. It is likely that it was the very quietness and demureness of her manner that fascinated him. As she was not a girl who appeared in public unchaperoned, he invited her and her parents to the yacht on various occasions. Both her parents were of the Vatican nobility, he a member of the Pope's *guardia nobile,* she the daughter of Marchese Sacchetti, of an old family and owner of a palace in the Via Giulia in Rome.

Marconi saw their daughter whenever he could, on the beach

of Viareggio or at a small restaurant, the Savoia, where he would take a table close to the one where Cristina and her mother and father were dining. Father was like a schoolboy, hoping to catch glimpses of her, his romantic attachment feeding on her inaccessibility.

Though I, who remember Father from my childhood looking wonderfully young, detected signs of age in him at fifty-two, he seemed remarkably ageless to new friends. His health was vigorous, his energy unfailing. He dyed the few telltale gray hairs at his temples. Cristina, at about twenty-six, was decidedly unworldly—she had seldom traveled far from Rome—and to her, Father was a knight in shining armor. Except that he was divorced and had three children, he was any woman's dream of a great catch.

Obsessed though he was with his new romance, Father asked me how I would react to his marrying Cristina. I weighed the matter carefully and at length solemnly told him that I would be pleased. It seemed to me that Father, whom I deeply loved, had had too much of loneliness, and that it could not fail to deepen with the years. To overcome it he had resorted to the company of women who gave him no lasting pleasure. Surely a nice girl like Cristina would make him happier than the fly-by-night ladies with whom he was solacing himself.

Cristina Bezzi-Scali was a thoroughly nice girl and, except for her beauty, something quite new in Father's experience. For all her high birth, she was completely naive about the ways of the world he frequented, more so, even, than his first wife had been. And, as he had with Bea, he made up his mind that he must marry this girl, so fresh and dewy, so out of the ordinary. Nothing should stand in his way. As a matter of fact, a great deal did. The Roman Catholic Church. The Bezzi-Scalis would never permit their daughter to marry anyone who had been divorced.

CHAPTER TWELVE

In the eyes of the Church of Rome, Father's divorce from Beatrice O'Brien Marconi was invalid. The only way that he could win its blessings for his second marriage would be if he could gain an annulment of his first. Three grounds for annulment are countenanced by Rome: if a marriage has been contracted under moral or physical pressure; if lack of consent can be proved; if one of two married non-Catholics is converted to Catholicism and the other partner is unwilling to cohabit peacefully. The second of these, lack of consent, Father's lawyers advised him, was the only ground applicable to his case.

What he needed to prove was that his first marriage (a contract or sacrament) had been entered into with mental reservations by either or both of the contracting parties. If this could be shown, the marriage might be adjudged not a true sacrament and declared null and void. It would not be enough for Father and Mother to state they had had reservations. Witnesses must be found to testify that they knew of such reservations at the time.

Marconi remembered—as did many other people—that Miss O'Brien had declined his first proposal because she was convinced at the time that she did not love him enough to marry him. Furthermore, her parents had tried to block the union as un-

suitable since he was a foreigner. He hoped to be able to prove that Beatrice had voiced her doubts of him to other people, who now would be willing to recall them under oath. He also needed to establish that they had made an agreement between themselves: that if they could not make a go of married life, they would have recourse to divorce. This would be tantamount to lack of consent.

Father could accomplish none of this without Mother's full cooperation. She says she was prepared to raise no objections, but Father was so overwrought that he did not begin by sounding her out. Instead he brought pressure to bear and melodramatically resorted to threats.

Mother herself, a Protestant married under civil, not religious law, to a Catholic in a Catholic country, found many doors closed to her, especially after Flaminia's birth. She had no desire to place like obstacles in the way of Father's happiness and her new husband felt it would be the generous thing for her to do as Marconi asked.

Key letters in the protracted correspondence that followed tell the story of the case that was brought before the sacred courts of London and Rome. The first one from London is dated June 22, 1926:

> Dearest B,
>
> I arrived here yesterday evening after a very good journey. I left Degna at the Ozanne's in Paris. We had such a nice time together.
>
> In regard to the other matter that we discussed in Rome, I think the witnesses whom it might be well to have called might be: Lucius, Charlie White, Lady Leicester, Barney and Clare. I would be glad if you could let me have their addresses and also if you would write a note to each of them saying I will try and see them so that I can explain what it is about. . . . Hoping I may hear from you and that you are well, with love
>
> yours affectionately
> *Guglielmo*

Two weeks later he wrote again, very much the general marshaling his forces and issuing commands:

Dearest B,

Thanks for your long letter and also for your wire giving me the addresses of Barney and Maud. I have already seen Charlie White and Clare and they will be glad to testify before the Roman Catholic Authorities in the manner necessary to obtain the object that we have in view. Charlie White is especially definite, as he happens to remember some conversation he had with your mother, before our marriage, in regard to the possibility of a divorce in the unfortunate event of things not turning out happily for you. Clare is a little more vague but I think she will be all right. She has had a quarrel with your Aunt Alice about Dorrien and begs me not to ask anything from Lady Leicester as she is (Clare says) most awfully unreliable and might do us more harm than good. I hope to see Barney and Murrough today. I have seen Alfonso and he will be all right.

I have been called to attend at Archbishops House, Westminster, on Wednesday the 7th instant and some of the others will be invited.

Monsignor Surmont, the Vicar General, who has the matter in hand, has written me a note, telling me that he is preparing the papers for your *Interrogatorio* [examination] to be sent to Spoleto, and that you will be soon invited to testify at Spoleto. The most important thing for you to say, is that *before* we married (and if you can say it, because you were not sure of your feelings towards me) *we were quite agreed that in the event of our marriage not turning out to be a happy one, we would have availed ourselves of the possibility of divorce,* and that our marriage was not entered into with the idea *that it was indissoluble in the sense understood by the Roman Catholic Church.*

In other words, that we agreed that if the marriage were not happy we would always be able to get a divorce—and that some of our relations knew of this.

They may also ask you how long we lived together, and I think the answer would be, for about eighteen years—and they may also ask you how the rupture occurred.

Although, as you know, I don't want you to say anything to the detriment of either of us, you might say that, as we found that unfortunately we did not care for each other any more, and you did care for and wanted to marry Marignoli, as you eventually did, we decided to divorce. The trouble in regard to this

point is that they may have asked for the Fiume decree of dissolution of our marriage, and this clearly states it was because you left me; and, of course, you would have to say the same thing if asked. Please remember, however, that in any case all the proceedings are *absolutely* secret, and nothing will ever get out. As soon as I have been examined I will write you at once, and tell you all about it. *Don't show this letter to anyone,* but it would be well if you would *read it over again shortly* before you go to testify. With love to you all.

Yours affectionately
Guglielmo

P.S. I have just seen Murrough. He is a bit vague but may say something useful. He suggests I should see Donough and ask him to testify. What do you think of this suggestion? I forgot to tell you that Clare and Murrough are dead against my speaking to Lucius, as they say he is under Ethel's thumb, and that she is always very nasty over anything to do with divorces or annulments. *G.*

After Marconi's examination in London's Westminster Cathedral, he wrote again on July 8, 1926:

Dearest B,

Yesterday I appeared before the Roman Catholic Ecclesiastical Commission at Archbishops House, Westminster Cathedral. They asked numerous questions, as to how I was brought up, the religion of my parents, etc. but most particularly as to whether before I married I had any understanding or agreement with you, that in the unfortunate event of our marriage not proving to be a happy one we might have later tried to obtain a divorce. I said that we had such an understanding. Principally because you and your family had some grave doubts as to whether you were doing well by marrying a foreigner. They also asked me what view I took of the words "till death us do part" in the Church of England Marriage Service. I said that in my opinion these words, although still retained in the Church of England Service, are not considered to be binding under all circumstances, even by the Church itself, because the Church of England, which admits divorce which the same church recognizes and in many cases approves, and that knowing this I did not consider them

binding in the literal sense any more than the wife's promise to obey.

Charlie White and Alfonso also testified yesterday. I had a long talk with Clare, who very strongly urges me to have Donough called as a witness, as he was likely to know much more than any of them, as to what took place or was said at the time of our marriage. I therefore saw Donough and found him anxious to help and likely to be of great use. He told me that he distinctly remembers that your poor mother was rather worried over our marriage, and even said that she would not have given her approval, if we had got married in a church or country in which divorce would have been impossible, and that this possibility was in their minds all the time. When you are called at Spoleto, do try and confirm all I have said, otherwise we may lose, and our position will be worse than before. The witnesses still to be called are Donough, Murrough, Barney, Clare, Solari, and to show that you did not change your mind in regard to the possibility of divorce, Baby and Piero. The Ecclesiastical Court has got copies of the divorce decree of Fiume, so don't say anything different to it, if you are asked. I hope you have received my long letter of the 4th on this subject.... I hope I have written clearly, as I am in an awful rush. With best love to you all.

Ever yours affectionately
Guglielmo

Father wrote from the Savoy Hotel in London on July 20:

Dearest B,

Degna arrived from Paris this evening looking very well and happy. I have taken her to Clare, who is putting her up for a few days, as it was impossible for me to have Degna here, because I have got to go away for experiments in a day or two and, of course, I would not leave her in a hotel. Thanks for your letters of the 8th and 15th which I would have answered before had I not been so frightfully busy. Re the case in the Ecclesiastical Court, Charlie White, Alfonso, Barney and Donough have already testified. Murrough and Clare are going to do so tomorrow —Charlie White and especially Donough have been most useful and anxious to help—and I expect Clare will be all right too. Barney did appear to me, too, to be reluctant and unsympathetic,

but Donough spoke to him, and I'm told he too was very good. I will see how the others get on before asking your Aunt Violet St. Maur. Perhaps it may not be necessary to do so after all. I have just heard that Moira is expected here from America in a few days. I may ask her as I feel sure she would do anything she could for us. I am rather surprised you have not been called to Spoleto yet, but expect it will be in a few days. Remember you make clear our *understanding* or *agreement* to divorce in the unfortunate event of our marriage not being a happy one. That we had this understanding before we married, and never changed it afterwards, as you well know.

I am rather in trouble over Cowes. The Company is in a very difficult position in consequence of several of the late Mr. Isaac's ventures having failed, causing the loss of an awful lot of money. We have to hold the General Meeting by the 15th of August, and the only way to avoid very serious trouble with the shareholders is to have my new "beam" stations going before that date. They are nearly ready, but I have to work at them, like in the old days at Glace Bay, all through Cowes week and not be able to go to Cowes at all. But, whatever happens, don't worry about Degna, she will be well looked after. . . .

Ever yours affectionately,
Guglielmo

He was intensely nervous lest Mother make some mistake and coached her endlessly, writing on July 23:

Dearest B,

Just got your telegram telling me you had gone to Montecorona. This is just to let you know that the Vicar General of Westminster is now sending out the papers to the Archbishop of Spoleto to have you called. As I have given them your Spoleto address it is *most important* you should make sure that all papers and letters should be promptly forwarded to you from Spoleto to Montecorona, as otherwise you might miss the summons and thereby create a bad impression. From what I have heard I think that Donough and Clare have said that you spoke to your mother about your doubts over marrying me, and of our understanding in regard to divorce in the event of our marriage not turning out to be happy. It would be well if you could confirm this when you

are called. Baby and Piero Colonna have also been heard, and they said that you did not change your mind in regard of the possibility of a divorce, after your marriage. I am most awfully busy or would write more, but hope to do so in a day or two. I have just wired asking you to send our Giulio—as he can come with me and Degna on the yacht. I am not yet certain if I can go to Cowes after all. The Company is not getting on well, but my new beam stations are working splendidly and am sure will enable us to put things right. But once more, everything rests on me and it's rather hard.

Ever yours affectionately,
Guglielmo

Marconi did succeed in getting to Cowes, as his next letter shows, and had a giddy time there:

Dearest B,

. . . I am sure . . . that Degna and Giulio have already written giving all our news. I was fortunately able to just manage two days and a half at Cowes with the yacht. I attended the King's dinner at the R.Y.S. and was able to take Degna and Myriam to two dances, one, a small but very nice private dance at Lady Baring's, and the other a very large one in Cowes. Lady Baring was most kind and Degna got lots of partners and I feel sure enjoyed herself hugely! The party on the *Elettra* consisted of myself, Myriam, Degna, Giulio, Gino and Noel Corry (who asked himself!). I could not fix up with anybody else as I was, up to the last minute, so uncertain as to whether I could go to Cowes at all. We had luncheons and dinners on board and heaps of people came including Brenda Dufferin, Lucia Monckton-Arundell, Nada Milford Haven, Edwina Mountbatten and her husband, the Birkenheads, the Duke of Sutherland, Lady Eva Baring and Poppy, Imogen Grenfell, besides lots of men of which I can't remember the names. I am sure Degna and Myriam enjoyed it all very much. We afterwards went with the yacht to Dartmouth (a most beautiful place) which is near to my station at Bodmin, where I am doing very important work. I am now in London, where Gino has come too as I have got other work at the office for a day or two. All the others are on the yacht.

. . . Moira has arrived from America and dined with me last

night.... We have arranged for her to give evidence before the Roman Catholic Authorities at Westminster, as she remembers, in regard to our marriage, many useful particulars of what was discussed at the time of our engagement, and says she is certain that your mother would never have given her consent had she thought that divorce would have been, *in my case,* impossible.

In connection with the proceedings I am told that the papers have already been sent to Spoleto, and that you may be called any day. Please remember all I have already written you in regard to the matter and particularly in regard to our understanding or agreement to divorce in the event of our marriage not turning out to be a happy one.

Here he breaks off to say that he has arranged to have a pony sent to Gioia at Spoleto and that "It's not at all easy and frightfully expensive," then reverts to the matter uppermost in his mind.

Please let me know, *by telegram,* when you are called to Spoleto. From all I can hear, the case, so far, has gone very well for us and they now only need your testimony before coming to a favorable decision.

Mother promptly wrote and suggested that the frightful expense of the pony could be foregone, drawing an instant reply:

Dearest B,

Thanks ever so much for your very kind letter of the 24th inst. There must have been a mistake in the telegram I sent you some time ago, or got Magrini to send, in which I said I had arranged for the *horse* not house. Your telegram and letter telling me not to trouble to get the pony arrived too late, as I had already got it. It should have arrived at Spoleto by now, and I do hope you will like it and Gioia will enjoy it. I'm told it's the best and nicest pony possible for a young girl—strong, quiet and good tempered. I'm really so glad that Gioia will have it. Give her heaps of love for me. I haven't been able to arrange anything about a house, yet, as Noel would not let, and Lady Falmouth's could only be had until the 20th of April, which would have cut

out the best part of the season. I might have found something else if I'd had the time but have been most awfully busy and almost worked to death. I'm well, however, although very tired, but I hope the journey back will make me all right again. I expect to be here another day or two, and then sail for Gibraltar. On board I've got, besides Degna, Gino, Myriam and Noel Corry. All are well. I shall write you from Gibraltar exactly when I'm going to arrive in Italy, but expect to have to go to Spezia for some important experiments before going to Livorno. It will be nice if you can meet me at Livorno as we could then arrange things for the winter and I might get a house when I come back to England.

... Forgive great haste, but am busy all the time with most important tests with South Africa and Canada. Am told that the delay over calling you to Spoleto was over having to translate the papers from English to Italian!! If you are still not called, will have them hurried up from Rome, but I hope you have written to the Arcivescovo in the way I suggested in my last letter. They only want your testimony to decide, but please remember to read over my letters on the subject before you go, as it depends so much on your saying that we were agreed to divorce in the event of the marriage not being a happy one. Just simply a legal quibble on a matter of words or thoughts! Forgive very great haste, but I am still rather busy.

Ever yours affectionately,
Guglielmo

The protracted proceedings drew toward a close when Mother gave evidence at Spoleto. Father's relief shines through the part of his next letter where he says: "I am awfully glad you were called to Spoleto, and I am sure you were, too, to have got it all over. I am sure they were quite nice and I hope that when we meet you will be able to tell me something of what they asked you."

With this phase of the annulment completed, Marconi wrote Mother happily on November 10:

Dearest B,

I hope you have received my telegram telling you that it would be better for Degna to remain with you this winter and that we

might be able to decide for a house here later, preferably for the London season.

I have been rushed to death with things and I now have another lecture coming on in Rome. I am very likely to have a row with the Company here and tell them to go to hell in which case I would come to live in Italy for a time. How could I arrange for a house here under the circumstances? My work has gone splendidly, and I have got lots of new inventions that I may be able to sell in America, if I split with the Company, but it is nevertheless probable that things will be arranged. I have just dined with Donney, he's a dear but as you know not restful. I am awfully glad to let you know I have just heard from Monsignor Surmont that the Court at Westminster Cathedral has granted the religious annulment of our marriage, insofar as it concerns the Roman Catholic Church. *But* the decision has to be confirmed by a Court at the Vatican in Rome, and they may take two or three months more. Anyhow I hope to tell you all about it when I get to Rome. In the meantime, of course, you could not marry in Church, until the case has been finally decided in Rome, but it's more than half the battle having the decision in our favor in London. All this too has taken up a good deal of my time answering letters, etc. I am leaving on Saturday morning and hope to arrive in Rome on Sunday evening the 14th at the Grand Hotel.

The last act of the drama played in Rome as recorded in this communication of November 26:

Dearest B,

Am just writing you this in a very great hurry as I have still got an awful lot to do over important negotiations with the Government.

In regard to our case which is now at the Vatican, you will receive a *citazione* to appear which Avvocato Ferrata is bound by their rules to send you. Avvocato Ferrata asks me particularly to tell you that when the invitation or *citazione* is served or delivered to you, you should say or write that *you will not appear,* and that you rely on the justice of the Court, i.e. *I will accept the justice of the court.* That is, if the *Citazione* is made out for or signed by Avvocato Nazzareno Ferrata, but if the invitation or

citazione should be by a judge of the Court, then you will have to attend. I hope I have made myself quite clear. As you may have seen in the papers on Wednesday evening, I was received by the Pope. He was quite charming and I found him quite broad minded. Of course I never mentioned anything about our case. He told me he had listened to the whole of my lecture at the Augusteo on the wireless.

He has been at Oxford and knows England well. On my leaving he made me a present of a beautiful gold medal as a remembrance of my visit. I had asked to see him on the suggestion of Cardinal Gasparri. Don't tell this to anyone and also keep private what I have told you about your refusing to appear before the Ecclesiastical Court if invited by *Avvocato Ferrata.* I am in a most awful hurry and not feeling very well from over-work. Give my very best love to the children and thank Degna for her letter. I am leaving for London tomorrow morning.

Yours affectionately,
Guglielmo

From the Savoy comes the next letter, on November 30, 1926. It is marked *Private.*

Dearest B,

I arrived here late on Sunday night after a good journey, but found awful weather—fog, sleet, and snow.

I have not been feeling well since my arrival, but think it's only something I ate on the train. I am not going to the office today. I hope you received my letter sent you from Rome before I left. I have now heard from Avvocato Ferrata that a *citazione* from him is going to be sent to you by the Court this week. As I have already written you, you *should not attend,* but simply say, or write, in reply, *I submit myself to the justice of the court.* That is if the *citazione* is by Avvocato Ferrata. If, however, you should happen to receive another *citazione* by a judge or the judges of the Court, then you will have to attend; and it will be necessary for you to say, in answer to the questions they will ask, that the understanding or agreement in regard to a possible divorce (in the event of our marriage not being a happy one) was expressed not only to members of your family but *also with me.* It would not be sufficient, Avvocato Ferrata says, if you said:

non escludo che vi fosse questo accordo fra me ed il Signor Marconi prima del matrimonio, in order not to contradict too flatly what they apparently made you say at your examination at Spoleto.... Please don't talk about what I have said in this letter.

Of this long correspondence, the last letter in my possession, again from the Savoy, is dated December 6:

Dearest B,

I received your letter of the 2nd inst. this morning. I have been laid up for several days with a swollen foot caused by wearing too hard or too tight a boot, and the doctors said it might be dangerous if I went about too early. I am, however, much better today and hope to be able to get out tomorrow.

I hope to get to Rome by the 22nd or 23rd but things are so very unsettled with the Company that it is quite possible that I may not be able to get away at all. A committee of investigation is going through all the past accounts and business done by Mr. Isaacs and others and if they don't finish before Christmas I can't go; so you see how absolutely impossible it is for me to make any definite plans. As soon as I can get out again I will try to fix up about the hotel for you and Degna and suggest you might come over about the 5th or 6th of January.

... I don't well know the reasons why the Avvocato does not want you to appear before the Court at the Vatican, except that he told me he wished to avoid your being questioned or cross-questioned by both sides. If, however, you are called by the Court and not by him, you should go, and will then only be questioned by them.

I can't understand all this fuss over the Marlborough case, as the decision only concerns the R.C. Church, and no other, and does not affect their children in any way. Most of the trouble has come through Mrs. Belmont (her mother) telling the newspapers that she had never tried to force or compel her daughter to marry the Duke, whilst she most definitely swore in her evidence before the Ecclesiastical Court that she did!! She certainly must be a liar!

I enclose a cutting which speaks about it, but the papers are

also wrong in saying that 5000 lire was equivalent to 121 pounds last March—as it was then worth less than 50.

. . . In very great haste.

Yours affectionately,
Guglielmo

P.S. I am so glad Gino Potenziani has been made *Governatore* of Rome!

Touchingly, these letters reveal the affection Beatrice and her family still felt for Guglielmo, an affection so unswerving that it even extended to giving him his freedom from them. Without their united help he could never have gained it.

On April 27, 1927, the Sacra Rota Ecclesiastica annulled the marriage of Guglielmo Marconi and Beatrice O'Brien on the grounds of lack of consent.

CHAPTER THIRTEEN

Guglielmo Marconi married Cristina Bezzi-Scali on June 12, 1927, in a civil ceremony at the Campidoglio. On June 15, a religious ceremony was performed at the fashionable church of Santa Maria degli Angeli. I was at Spoleto with Mother. My high-minded acquiescence when the idea of the marriage was first broached was so youthfully sincere that I was surprised to find myself sad when it actually took place.

Father and his new wife honeymooned in the Villa San Mauro near Rieti, then sailed in October for America on the *Biancamano.* It was twenty-eight years since his first trip across the Atlantic and, Orrin E. Dunlap records, his eighty-fifth crossing.

In a frenetically hospitable mood, New York made a Roman holiday for the bride and groom. As natty little Mayor Jimmy Walker said cockily when he welcomed the Marconis to City Hall: Why not? This is the "biggest Italian city in the world."

Pupin, his faithful friend and admirer, introduced my father when he lectured before the Institute of Radio Engineers in words that summed up everybody's feelings. "Marconi, we love you. We have come to see your boyish smile as much as to hear what you have to say."

Their merry time had an ominous aftermath. Marconi loved

to watch the sea and sky and had measured many a mile walking around the deck of the vessel that brought the couple back to Europe. It was midwinter, cold and stormy, and when Father began to suffer sharp pains in his chest he supposed that he had caught a chill. The spasms, however, continued and after he arrived in London grew more acute. Mr. Prince, the top heart man in London, was summoned to Father's bedside at the Savoy and after a searching examination diagnosed a severe case of angina pectoris.

A few years before, the Marconi Company, with which he was once more on the best of terms, had had a medical checkup made of Father for an insurance policy and he had come through with flying colors, especially as to his heart. The shock of this grave illness was doubly hard to bear for being so unexpected. I myself believe that the uncertainties and stresses attendant on setting up the short-wave radio chain had taken a deeper toll of him than anyone realized at the time.

Cristina moved her husband to a nursing home where he remained for two weeks and from which he emerged, it seemed, much restored. However, back in the Savoy he suffered a second attack so violent that rumors circulated through the hotel and one newspaper published news that he was dead. The best doctors in London were again called, including the sympathetic and trustworthy Dr. Tallarico from the Italian Hospital. Father began to mend for a second time but his recovery was frighteningly slow.

As soon as he was able to travel his wife took him by easy stages to Rome where two excellent Italian physicians, Professors Bastianelli and Frugoni, gave him devoted care. At the end of several months he was pronounced well enough to resume the regular routine of his life though he never again was able to work with the unrestrained buoyancy he gave to his early achievements. Nor was he able to pick up the thread of his active experimentation again until 1930. In the meantime he had to content himself with consolidating what he had done before rather than pioneering new trails.

Through this trying time Father was no easier a patient than when he had lost his eye. It must have been trying for Cristina.

During the next couple of years Giulio and I got to know her and indeed saw a great deal of her the summer of 1928 when we were on the yacht for many weeks together. Toward the end of that summer, at Viareggio, her parents joined us on the *Elettra* and her mother was particularly friendly to me. At twenty I was still so shy that I did everything I could to disappear when I saw the launch bringing gay and fashionable friends out to the yacht.

In view of the agreement about sharing us that had been made at the time of Father's and Mother's divorce, we took it for granted that we would spend our summers with Father until we were off on our own. Since our parents' relations were conducted with meticulous politeness on both sides, Mother invariably waited for a specific invitation to arrive from Father before she made plans for our summers. For two years we were asked and went to England to cruise with Father and Cristina for whatever periods of time suited everybody's convenience. Then, with no explanation, the invitations ceased.

I can only guess at what happened. None of us in Italy ever really knew. It is, I think, reasonable to assume that Cristina preferred to be the sum and substance of her man's new life, a life from which she wanted all souvenirs of the past swept away. We were the strongest links with that past and so it was better that we be banished.

Nor were we, his children, the only victims of what, if my analysis is correct, I can only call my stepmother's obsession. Captain Lauro was dismissed from the *Elettra* where he had served so long, so autocratically, and so impeccably. Father's secretary, the estimable Mr. Magrini, a veteran of twenty years and generally considered indispensable, was now judged dispensable. Luigi Solari, the friend of Father's school days in Florence and a witness for Father at his second marriage, was subtly barred from taking active part in Marconi's life, though the two men were reunited a few months before Father's death.

Cristina was young and she gave convincing evidence of being overpoweringly excited by the prominence of her husband, in which she shared and took frank and unabashed pleasure. Under her influence, the aloof man, the man who had been too "terribly

busy" for personal publicity, no longer avoided it. Instead he embraced the honors and distinctions that once embarrassed him. Beside him, radiant and proud in the limelight, stood his young wife. Outward manifestations of fame, so sedulously and so long discouraged, were Father's daily bread in this last phase of his life. He opened fairs and cut ribbons, he "appeared" in public and lit distant beacons in Sydney and Rio by pressing wireless keys. Wherever the Marconis went he submitted without cavil to endless picture-taking by movie as well as still photographers.

At Cowes for the Royal Regatta he posed with Cristina, smiling, at his side. Beneath his black-visored, white-topped yachting cap his expression is slightly strained and the wrinkles under his eyes and from his nose to his mouth are deeper etched. He walks with a cane now but briskly, one can see, a cigarette in his hand. His wife, as tall in high heels as he, looks pretty, assured, satisfied.

I think his chief delight was in pleasing her. His great working years were over and Cristina gave him an illusion of the youth that had slipped away. His first marriage ended in failure. This one would prove that it was not altogether his fault.

It is thoroughly understandable that Father, so wrapped up in his wife and her world, reverted shortly after his second marriage to the faith in which he had been baptized, Roman Catholicism. It is true that from his childhood he had followed his mother's strict Protestant training and he had been confirmed as a Waldensian, an Italian Protestant sect, at Livorno in 1894, and had insisted that Giulio be baptized by a Waldensian minister in 1910. However, in recent years he had actively practiced no religion. He was, I am convinced, easily persuaded that he might find inner peace and greater harmony with Cristina if he embraced Catholicism.

A friend of mine who saw the Marconis together in Venice at about the same time reported that Cristina was "preening herself" and Father wore a "seraphic air." I did not believe her. This was not the man I knew. Later at our Embassy in London I myself saw them together and I knew the description was cruelly true. Father was aging and Father was doting. Perhaps irrationally

I begrudged him that happiness that separated him from me. I can only hope that he was truly happy.

Mother watched them from afar (she never actually saw Father again after 1928) and whatever she may have felt, she kept her thoughts to herself. But she was seriously discomfited by the complete breach which, as time passed, succeeded the early and friendly mutual consultations about us. Marconi, the man who hated making hard-and-fast financial agreements, had declined to make any for her children. She brought the matter up in letters, since this was the only way she had left to communicate with him, and he brushed off her queries, assuring her that he would take care of us. Mother reluctantly concluded that it was safe to believe him if only because failure to provide for us would make an ugly impression in the eyes of the world. In the meantime, we had our allowances as proof that we were not wholly forgotten.

The year that the invitations to visit Father ended, our pocket money was also reduced, causing Mother fresh alarm about our futures. The time had come, she felt, to press Father to confer with her on money matters and she wrote him urgently to that effect. Father at first replied courteously that he would be glad to talk to her and made appointments. These he failed to keep and left later letters urging a settlement unanswered. Frantic, Mother summoned her lawyer. This was the signal for open war, and in Father's eyes we had all to choose up sides. He had every reason to assume that, since we still saw Mother, we had lined up with her, conveniently expunging from his memory that it was he who had severed his ties with us.

In fact we two older Marconi children, Giulio and I, were physically removed from the scene by the time the struggle reached its height. I was living by myself in London and Giulio had gone into the Navy. Even Gioia—Puffett, as Father called her—had left home and was in school at Florence. We did, however, spend some of our vacations with Mother and were cast in the unhappy and unwilling role of ambassadors from one to the other of our parents. The chief mission with which Mother charged us was to

at least get the full amount of our allowances reinstated. This Father categorically refused to do.

When none of our embassies availed and the lawyer was equally ineffectual, Mother appealed to Cardinal Gasparri to use his good offices with Father about our welfare. This, too, miscarried woefully. Father was incensed rather than moved and chose to see Giulio and me as conniving in the maneuvers.

However he did send me a card dated July 20, 1930:

My dearest Degna,
Just a line to tell you today at 5:05 P.M. a little girl arrived. She is quite pretty and both she and Cristina are getting on very well.
With best love in haste.

Your,
Daddy

Scratched in the lower left-hand corner are two *X*s, for kisses. They recur through his letters to me, a shy indication of the affection that somehow survived between us. He was a man who found it impossible to put his feelings into words and I sense rereading his letters, strangely formal though they were, that he was trapped by his British background in a language of understatement. When, indeed, he did manage to set down some part of what was in his heart, he slipped, unconsciously, into the easier, warmer vernacular of Italian, in which he finds it possible to say, "So much love and so many kisses from your affectionate, Babbo" —*"Tanto amore e baci dal tuo affettuoso,* Babbo," or "A million kisses,"—*"Un milione di baci."* In English it was more likely to be "Ever your Aff., Daddy."

She was born, this baby, at the Villa Odelscalchi, near Civitavecchia, a country house beside the sea that Father had rented. A few days later she was christened Maria Elettra Elena Anna by Cardinal Pacelli who was to become Pope Pius XII. I would have loved to see my baby half sister. I did not and we have never met.

My mother, desperate at Father's failure to honor his pledge

that he would provide for us financially, was tempted to use any means she could to force a showdown. The means were hers. Father's letters to her at the time of the annulment were so susceptible to being misconstrued that they might cause the Roman Catholic authorities to question the validity of his second marriage. I have serious doubts that she would ever have used them to hurt him publicly but she had every intention, I think, of invoking them privately to get her way. Without the knowledge of any of us children, she consulted a lawyer in Rome who advised that she bring action against Father.

When, at the eleventh hour, we were told what was impending, we were horrified. As Mother had no real wish to be vindictive, she readily acceded when we begged her to withdraw from her position.

Father, alas, did not know what role we had played and allowed himself to be persuaded that it was not Mother but we who were the real culprits in what he may well have thought of as blackmail.

All love for us was erased, or so it seemed, when in 1935 my father, Guglielmo Marconi, wrote a will bequeathing everything he had to his wife Cristina and his daughter Elettra.

Giulio and I were beyond the pale and, by association, Gioia, branded in Father's mind as callous and indifferent to him.

Under Italian law children are guaranteed what is called the *legittima,* which I suppose might be construed as the orphan's mite. That was all that we were entitled to. So things stood between us for several years, the estrangement between Father and his three oldest children pitifully close to absolute.

Yet at this time Father was on a sounder financial footing personally than ever before. One lingering nightmare had been dispelled forever. Presiding over a radio conference held in Paris in 1925, Father had allayed the cable companies' fears and enmity when he declared that the Marconi Company had no intention "to embark on a price war.... We want to serve the public in the best way we can by collaborating with all those dedicated to the rapid transmission of human thought." This statement

was understood to be an official announcement of the merger of the cable and wireless companies.

It was followed by long and tortuously complex negotiations which ended in 1928 with the marriage of the giants. From a monetary standpoint this was good and it brought gratifying acknowledgments of Father's greatness. In a House of Commons debate the Chancellor of the Exchequer pointed out that short-wave transmission between England and Australia had caused a continuous decline in the cable companies' income with a consequent loss of revenue to the government. Said Prime Minister Ramsay MacDonald, "From 1924, when some important experiments were carried out at sea, by a person whose name will go down to posterity with honor, I want to refer here to Mr. Marconi, the cable Companies have fallen in bad waters." Father ever afterward kept the copy of Hansard containing these speeches.

Actually the merger was a compromise with which Father was not entirely content. In some respects the cable companies, his old and implacable rivals, had, it seemed, succeeded in swallowing the younger Marconi Company, rather than being swallowed. The arrangement of names—Cables and Wireless—was subtly galling.

At the same time Father had many causes for contentment. As long as the frontiers of wireless were expanding, he was absorbed and delighted. Radio had proved its inestimable worth at sea, now it proved it in the air at the ends of the earth. Admiral Byrd reached the North Pole by airplane in 1929 and listeners at radios in every country on earth followed his flight. The previous spring Father's compatriot, Umberto Nobile, had set out on his second North Pole expedition in the airship *Italia* and with him, on Father's advice, had taken in addition to standard broadcasting equipment, a very small short-wave transmitter, built for the purpose by the Marconi Company. The ship crashed on May 24, ten of the men thrown out onto the Polar ice, six carried off to their deaths by the balloon. Among the men who landed safely was the radio officer, Biagi, and by means of the tiny instrument of communication he was able to establish contact with rescue parties. The red tent that sheltered the survivors was sighted

in June by an airplane from a Swedish expedition and the men who had not set out on foot for the base were saved.

Growing potentials of wireless in aviation were daringly demonstrated in 1933 by Italo Balbo, who led an entire Italian air fleet squadron on an instrument flight, navigating by short wave from Italy to Chicago. Not even failing health dimmed Father's sense of wonder at exploits like these, foreshadowing an even greater future. "It is dangerous to put limits on wireless," he said and looked forward to the propagation of visual images as well as the spoken word with confidence and excitement.

I saw him seldom and was still unable to tap the wellsprings of his interest. When he was in England, which was less and less frequently, occasionally he would invite me to lunch and over broiled chicken and a glass of wine we would talk discreetly of superficial matters—the weather, whom we had been seeing, the minutiae of day to day existence. We no longer met at the Savoy. Restless as always, he had given up stopping there and had moved to the Splendide in Piccadilly, where he had a view across the trees of Green Park. His health seemed good enough but he used a monocle to read and the lines in his face were deepening, his movements slower, his shoulders sagging.

My father was Marchese Marconi now, his title hereditary, and conferred by his King. He was also President of the Royal Academy of Italy; a govermental appointment.

It is difficult to recapture the political climate of that day in Italy. Living in England, and largely indifferent to world affairs, I had few opinions at the time, though I recall how my British friends used to say admiringly: Aren't you lucky to have Mussolini! Mother remembers having sat next to him at supper at a court function the last year she served as lady-in-waiting to the Queen and how impressed she was by the way he quizzed her about Ireland and its affairs.

Father, an avowed political innocent, was no more so than his friends and associates. In its early stages Father looked askance at fascism as rowdy and opportunist. Consequently, he felt grave distrust of the man who led it. But he was aware that Italy, torn by strikes, riots, and civil dissension, was spiraling downward

in a vortex that was destroying her prestige and causing other nations to regard her as a less than first-class power. These dual circumstances offended his essential sense of order and his pride in his country.

To the casual tourist Mussolini was the fellow who made the trains run on time; to people who saw catastrophe engulfing Italy, his was the strong hand that made the trains run at all. Father hesitated for three years, saying "I am not a political man," before throwing in his lot with the new order. In Rome he was criticized for this hesitation. Baron Alberto Fassini, an old friend, cut him pointedly in public and others sneeringly labeled him "pro-British."

It was, in the end, a feeling of duty that prevailed. As a Senator he felt responsibility, as a subject he believed he must follow his King. If Toscanini, whom he liked and admired, chose to turn his back on his native land, that was his affair. As long as the King stayed and did his best, the Senator-subject could do no less.

Father, who failed to grasp the implications of fascism, devoutly hoped that Mussolini might prove Italy's saviour. Mussolini, who wanted the luster that Father's name could shed on his regime, astutely wooed him, visiting the *Elettra* informally and displaying constant interest in the developments of wireless.

With world tensions mounting, the two men began to talk international affairs on what the Duce made to seem comradely terms. This was the surest, shortest way to Father's patriotism. At last he was invited to give advice, not as a "mere scientist," but as an expert on the Anglo-American world and at last his advice was heeded and followed, or so he thought, for a time.

It must have been deeply gratifying while it lasted, wiping out some of the bitterness, the frustration and humiliation Father had suffered at the hands of Nitti and from the failure of Orlando to stand up to Clemenceau and Wilson at Versailles. Then came disillusion and doubt.

The corruption of absolute power made Mussolini more and more imperious and impervious to the voice of reason. Large parts of the Western world, Marconi's second home, resented the Abyssinian war when it came in 1935. However there was also

in Europe a shrugging of shoulders by men who asked each other: Isn't this what all the great colonial powers have been doing for the better part of a century? Father, longing to have the country of his adoption understand the actions of the country of his birth, was eager to broadcast a fair and unbiased explanation of the Abyssinian campaign to the English. BBC refused him this opportunity and in so doing angered many Britishers who believed in freedom of speech and drew a sharp editorial rebuke from the London *Times*.

Father, the man of two centuries and two homelands, was shaken. I found him, one afternoon in Rome when, on an impulse, I stopped by to pass a quiet hour with him, in deep gloom. It was, he told me sadly, useless to try to talk to the Duce any longer. "He will listen only to what he wants to hear."

CHAPTER FOURTEEN

In 1933, the station that Marconi had built in 1900 at Poldhu sent its last message. A new age in "the rapid transmission of human thought" had opened. Ultra-short (10 to 1 meter long) waves were beginning to be used to supersede waves that measured up to 30,000 meters. This change was causing the old stations to disappear. All round the world the bright sparks that had lit night skies, the crashing and cracking, the signs in transmitting sheds CAUTION . . . VERY DANGEROUS . . . STAND CLEAR . . . were disappearing. Now in the air another challenge presented itself—the possibility of using waves which might be measured in centimeters.

There is a certain irony in the fact that the first waves Father sent hopping across the gap in a coherer were tiny and his early struggles had been to lengthen them: longer waves, greater distances. Nearly forty years later scientists began evaluating minute waves and gave them a name to indicate not only their size but also their ability to magnify, as a microscope enlarges an image—microwaves.

Some of the problems in this new-old sphere bore a strong family resemblance to the problems that confronted Marconi when he was working with long waves at the beginning of the century. How far would they travel? Under what conditions would they

prove reliable? By day? By night? Barometer rising or falling? What would hinder them? And even before the answers could begin to come in, time-honored objections were predicated by a younger generation of scientists. The cry now was: Microwaves can travel no farther than the eye can see—they are quasi-optical.

With his mind as flexible as ever, Father rejected the negative opinions. His health had checked him for a while but he was again able to withstand strain and he turned to experimentation, which was the only way he knew to find truth.

In any turning point of his life Marconi had invaluable men to assist him. It was not luck or accident so much as what he himself brought to his work and his working relationships. When he put to sea in the *Elettra* in 1931 to undertake the latest voyage of discovery, his helpers were the Belgian, Gaston Mathieu, designer of a short-wave receiver, and G. A. Isted, an Englishman still associated with the Marconi Company. Recently the latter published a paper, *Guglielmo Marconi and Communication Beyond the Horizon,* which gives an illuminating account of the task they had set themselves and the results.

The tests began between a transmitter mounted on the roof of the Hotel Miramare at Santa Margherita and a receiver in the stern of the *Elettra.* As Isted records, all went well. "Observations made while the *Elettra* steamed away from the transmitter showed repeatedly that the signals could be received up to about three or four times the optical range." That was the first score against the "quasi-optical" theorists and it was sufficient to spur Father to greater efforts.

"Tests were carried out a month later," Isted writes, "from Rocca di Papa [12 miles southeast of Rome] from a height of 700 meters, with the transmitting aerial array directed across the sea towards Sardinia. The receiver remained in the same position at the stern of the *Elettra.* The optical range under these new conditions was about 90 kilometers. Repeated tests again showed that microwaves could be reliably propagated to distances exceeding the optical range by two or three times."

Not all the experiments were successful but even the failures are indicative of the spirit which possessed Marconi. The *Elettra*

anchored in the harbor of Venice, 400 kilometers from Rocca di Papa, and Isted sadly noted: "The experiments failed probably because the distance was too ambitious considering the relatively low power radiated."

In the summer of 1933, Father proceeded to Cape Figari in Sardinia, observing and logging reception. Between the station at Rocca di Papa and a station set up in a tower at a height of 340 meters at Figari, the distance was 270 kilometers, the optical range 150 kilometers. Signals from the mainland were heard distinctly at times, better before sunset than afterward. It was a clear win and Isted reflected Father's excitement when he wrote: "His ambition was to break down the barriers which dared to impose limitations on the propagation of the radio waves he had made his life's study. With this in mind he set himself the task of removing the barriers which, at that time, seemed destined for the first time to prevent him from communicating to distances beyond the horizon."

Even before this one catches a joyous sound in Father's voice in the speech he made to the Royal Institution of Great Britain on December 2, 1932, which he introduced with the words, "The general belief is that with electromagnetic waves under one meter in length, usually referred to as quasi-optical, communication is possible only when the transmitter and receiver are within visual range of each other and that consequently their usefulness is defined by that condition.

"Long experience has, however, taught me not always to believe in the limitation indicated by purely theoretical considerations or even by calculations. These, as we well know, are often based on insufficient knowledge of all the relevant factors. I believe, in spite of adverse forecasts, in trying out new lines of research however unpromising they may seem at first sight."

How like him that is! His life was made up of trying out new lines of research, against adverse forecasts, advice, and reason. And when, at the end of his address, he summed up, he showed himself still the scientist who was ready to try conclusions with the future. "In regard to the limited range of propagation of these microwaves, the last word has not been said. It has already been shown that they can travel around a portion of the earth's curva-

ture to distances greater than had been expected, and I cannot help but remind you that at the very time when I first succeeded in proving that electric waves could be sent and received across the Atlantic Ocean in 1901, distinguished mathematicians were of the opinion that the distance of communications by means of electric waves would be limited to a distance of 165 miles." Microwaves had already traveled two-thirds that distance.

Of this pioneering, Thomas J. Carroll of the Lincoln Laboratory of M.I.T. wrote me in 1956:

> Even before the theoretical arguments over the explanation are settled, it is interesting to meditate on some of the events of the two decades of radio propagation history which elapsed before we realized the importance and significance of those early forgotten experiments....
>
> While the current controversy over the explanation of twilight region propagation still rages, the importance of checking theory by experiment and vice versa is a lesson retaught by this bit of radio history....
>
> Returning to the wave-length of Hertz's discovery, and of his own early demonstrations with copper bowl reflectors in England in 1897 on Salisbury Plain, Marconi, when he returned to the communications possibilities of this part of the radio spectrum in 1931, had the additional stroke of genius to suspect and verify his suspicions that the line-of-sight would not be the limitation generally believed to be the distances over which these microwaves could be usefully propagated.
>
> Unfortunately enough, the line-of-sight shibboleth became gradually restored to expert and lay opinion for several decades more, before the truth of Marconi's vision began to dawn for us. In the 1953 words of a fellow inventor, Howard Armstrong, a lifelong admirer of Marconi, "When we remember the low power available for transmission, and consider the incomparably superior equipment that has been available to us from the technical developments of World War II, the wonder is that his prophecy went so long unheeded, and that investigations of the past years were so long deferred. Certain it is that with the tools at hand, we have taken a long time to catch up with the prophecy."

Glorious and refreshing as this work was, it was by no means all that occupied Father's time and energies at this period. During the end of 1930 he supervised the building of a radio installation in the Vatican gardens, taking particular trouble to see that the work was well done. At the inaugural ceremonies of the powerful short-wave station on February 12, 1931, Father said: "For nearly twenty centuries the Roman Pontiffs have given their inspired messages to all people, but this is the first time in history that the living voice of the Pope will have been heard simultaneously in all parts of the globe.

"With the help of Almighty God, who places such mysterious forces of nature at mankind's disposal, I have been able to prepare the instrument that will give to the faithful throughout the world the consolation of hearing the voice of the Holy Father." And the blessing pronounced by Pius XI went out beyond the basilica of St. Peter's, where tens of thousands of people stood with heads bared, to hundreds of thousands of people in all countries.

Two years later, Father undertook a second task for the Pontiff. On February 11, 1933, he stood at another microphone with Pius XI, who said, "Our first word shall be for you, Marchese Marconi, and it will be a word of congratulation for the continuous success that Divine Providence and divine goodness have reserved for your researches and applications in this field." Father responded: "This first application of microwaves fills my heart both as an Italian and a scientist with pride and hope for the future. May my modest work contribute to the achievement of true Christian peace throughout the world."

The two men were speaking through the agency of 60-centimeter waves across the 15 miles between Vatican City and Castle Gandolfo, the Pope's summer residence, over the first telephonic system of its kind in the world.

Providence would certainly seem to have been at work in regard to this installation, for it opened up a new line of research for Father. One day the Vatican operator heard a strange noise which he described as "something like the sizzle produced by someone walking across slushy ground." It lasted only a few minutes but

it recurred on following days and always at the same time. Puzzled, he checked what was going on outside the window of the room where his instruments were. Each day as the sizzling began, a gardener slowly wheeled his cart down the path outside and it passed broadside through the beam of the microwaves. Father was instantly eager to apply research techniques to this curious phenomenon, but not until 1935 did he have time to turn from his immediate work with microwaves to the new investigation.

Sir Ambrose Fleming later regretted this move, saying: "It was typical of Marconi that, having proved to his own satisfaction that microwaves could be utilized for all manner of purposes, he set about developing and demonstrating some of the practical applications. Among these were specific navigational aids, which imposed a heavy demand upon the services of the *Elettra* and precluded her further participation in propagation experiments. Had it not been for this, the propagation tests would undoubtedly have continued and our present knowledge of tropospheric mechanisms might well have been much more advanced."

Father was constantly concerned with moving ahead, yet, as he grew older, memories claimed his attention, too. In December, 1931, he had gone to London to take part in celebrating the thirtieth anniversary of the first message sent by wireless across the Atlantic. Those two original stalwarts, Kemp and Paget, were happily by his side in the Electra House office when he made a broadcast, as they had been at Signal Hill on December 12, 1901.

Marconi took pleasure in reminding his listeners with what doubts the news of the accomplishment had been greeted everywhere except in the United States: "All but a few of the great American scientists believed in me, and the American Institute of Electrical Engineers was the first scientific body to endorse my statement. Naturally at this time my thoughts go back to the moment thirty years ago when, instead of sitting in a comfortable room in London sending signals I know will be received and understood on the other side of the Atlantic, I was standing in a bitter cold room on top of a hill in Newfoundland, wondering if I should ever be able to hear the letter *S* transmitted from England." For a moment all three must have recalled the youthful

camaraderie, the wicker hamper containing the balloons and kites, the tearing wind outside, and the saucepan of cocoa Kemp kept on the back of the little stove to warm Marconi when he came in from struggling with the icy kite cable that caught the first *S* from across the sea.

On this later day Father's words spread out from London in the greatest radio hookup that had ever been arranged, from continent to continent, North America to South America, Asia, Europe, and capital to capital, Berlin, Brussels, Rome, Paris, Warsaw, Washington, Rio, Honolulu, Caracas, Ottawa. Pupin, from New York, was warm and graceful as always, "Few of us understood the full meaning of Galileo's simple experiments, three hundred years ago, when from the leaning tower of Pisa he dropped little weights and from their motions derived the laws which guide the motions of the planets.

"Few of us understand the full meaning of Marconi's vision. But just as all of us now know and admire the sublime courage with which Galileo defended his new science, so we admire Marconi's sublime courage which enabled him to transform his vision of thirty years ago into the beautiful reality of our present radio. Italy can be justly proud of her two great sons, Galileo and Marconi."

Memories crowded in. Lord Rutherford presented Father with the Kelvin Medal. Lord Kelvin had been dead for twenty-four years but no Marconi man would ever forget his bluff preference for a "boy on a pony" to wireless to convey a message, or his charming *volte face,* when he insisted on paying a shilling, the first fee ever received for a wireless telegram, in 1897.

For George Stevens Kemp that glorious day crowned a wonderfully satisfying career. It was his last official appearance and a year and three weeks later he was dead.

For Father the London celebration was an interlude only. He returned to his investigation of microwaves and one of his scientific papers reveals how his mind was restlessly probing. "The theoretical explanation of the results obtained," he said in part, "when the wave length employed is taken into account, presents, in my view, serious difficulties....

"The speculations that may arise from such results concern the entire theory of radio transmission over distances greater than the optical one."

The difficulties stopped lesser men for many years. Said Thomas J. Carroll: "We are now waking up to the fact that Marconi was right twenty-two years ago about the propagation of UHF [ultra-high frequency] considerably beyond the horizon, even as he had been right about transatlantic wireless in 1901, and the usefulness of short waves propagated via the ionosphere in the early nineteen twenties.

"Although his transatlantic experiments were made in 1901, it was not until 1924 that it was proved to everyone that the ionosphere was probably responsible for the success of his 1901 defiance of the accepted line-of-sight views about radio propagation at the turn of the century. Likewise at UHF, his experiments on propagation well beyond the horizon were made in 1932, and again more than two decades have passed before the reasons why they worked are beginning to be understood."

CHAPTER FIFTEEN

By autumn of 1933 Father was on the move again. He wrote me on September 17th from the *Elettra,* in port at Spezia:

> My darling Degna:
>
> This is just to let you know that I have decided to sail on the 21st inst. from Genova to New York.
>
> I have accepted an invitation from the President of the Chicago Exhibition to visit Chicago during the first week in October and they are paying all my own, and Cristina's, expenses.
>
> It will be, I hope, a most interesting trip. Mussolini was very anxious I should go. I expect to be away for more than a month, and in fact hope to return on the *Rex,* which leaves New York about the 14th of October. . . .

A week later they sailed on the *Conte di Savoia.* In New York they were plunged into a cheerful combination of science and sightseeing. There were the usual interviews with reporters who invaded their suite at the Ritz, and an official tour of the new Music Hall, Radio City, and the broadcasting studios. (Dunlap, at the time on *The New York Times,* noted that Father seemed unimpressed and retreated into commenting: Indeed!) There were

old friends and business associates to see again, chief among them David Sarnoff, the tireless telegrapher at the time of the sinking of the *Titanic,* now president of RCA and much esteemed by Father.

Next the Marconis took the *Twentieth Century* to Chicago, where October 2 had been named Marconi Day at the Century of Progress exposition. Lights blazed on in response to a beam received by the telescope in the Florence observatory from the star Capella in the constellation of Auriga. Someone had calculated that it began its earthward journey during the lifetime of that other Italian scientist with whose name Father's was so often coupled, Galileo. Once again Marconi tapped out the letter *S* in Morse and the three dots circled the globe from Chicago to New York, London, Rome, Bombay, Manila, Honolulu, and back to the Century of Progress in three minutes and twenty-five seconds.

They stopped at Niagara Falls and then went on to Washington to dine at the White House with President Franklin Roosevelt. He recalled having met Father in 1917 when he was Assistant Secretary of the Navy. Father had to confess he had forgotten. During the comings and goings, impossibly heavy though his schedule was, Father managed to fit in a day with Dr. Vladimir Zworykin who was working on electronics and TV at the RCA Manufacturing Company in Camden, New Jersey.

Americans, with their exuberance and vitality, quite unconsciously forced Father to break the habit of a lifetime one evening during this trip. His secretary, di Marco, has told me that at a large meeting he was called upon for a speech without being forewarned. Marconi was a conscientious public speaker, writing out every word beforehand and reading his script precisely. When he found himself trapped with the need to extemporize, he sailed into the assignment and brought it off stunningly. Di Marco says it was the best talk he ever heard Marconi give and backs up his contention by saying that the response from the audience was tremendous.

Father and Cristina were not aboard the *Rex* on October 14

as he had planned. In a reversal of plans, they decided to continue westward around the world. On their way to California they stopped at Notre Dame University, which conferred an honorary degree of Doctor of Laws—this was his ninth—on Marconi.

After that a pure holiday spirit seems to have set in for the travelers. From the Grand Canyon, Father mailed me a snapshot of himself looking very jaunty and wrote that a gang of cowboys had whooped it up for them. They visited Mary Pickford at Pickfair in Hollywood and sailed from San Francisco, of which Father was an honorary citizen, on the *Chichibu Maru* for Yokohama.

I picture Father at sea walking the deck as he loved to do, playing endless games of shuffleboard, fraternizing with every child who came his way—and as few adults as possible. On this trip Father was, I am certain, clarifying his next "service to the sea-going community," for it materialized soon after his return. He was also trying to reconcile himself to the fact that Giulio, of whom he was so proud, was asserting his independence. He had given the Navy what he felt was a fair try and found that, as he had suspected from the start, it was not the life he wanted. So in 1933 he had resigned his commission.

In Yokohama Harbor, Father and Cristina were entranced by the thousand tiny boats with colored sails that decorated the calm water. It was a rippling print of the classical East, introduction to an ancient civilization. Always first a scientist, Father's favorite sightseeing was visiting radio installations.

Home again, in the early months of 1934, Father and Cristina were reunited with their small daughter Elettra and stayed at their apartment on the second floor of the Bezzi-Scali palace on the Via Condotti until July, when Marconi sailed again on his yacht.

There was to be a demonstration aboard and he had invited British and American experts as observers, including his old friend, Dr. Arthur Holly Compton, the noted physicist from Chicago. The ship headed up the coast to Sestri Levante, about 30 miles from Genoa, where the channel that leads into the port calls for skilled navigation at all times. Buoys indicate that it is treacherously narrow.

What Marconi proposed to do was to make the passage blind (as a ship's captain might have to do in a pea-soup fog) by means of a radio beacon. To simulate such conditions on a sunny spring day, he had the bridge completely enclosed by canvas screens so the skipper could see nothing outside.

Dr. Compton has told me that Father was constantly adjusting the instruments while the *Elettra* made this hazardous maneuver. Like many men before him, Compton was fascinated by the agility with which Marconi handled his tools, and the precision with which he applied them. The yacht proceeded at normal speed into the harbor. Her captain followed the straight and narrow course unerringly shown on the instruments.

Father was apparently in excellent health and spirits that summer. In September he began to feel unwell. After delivering a speech on the applications of microwave and a new branch of science now known as radiotherapy, before an international congress on electroradio biology in Venice, he had another severe heart attack. Professor Frugoni was summoned from Rome and under his care Father recovered fairly rapidly.

We were not told of this alarming recurrence of his angina at the time. There was, indeed, a conspiracy of silence, possibly dictated by Father. All the rest of that winter he was in Rome, except for a brief visit to England at the end of November, when he was made Lord Rector of the University of St. Andrews in Fifeshire. Again he was ill and I should not have known about it had he not written to me at Spoleto from the Empire Nursing Home in Vincent Square, Westminster, on December 23:

> My dear Degna:
>
> Thanks for your letter of the 20th. I am a little better, but, as you see, not out of the "Home" yet. . . .

He wished us a happy Christmas and sent us each a ten-pound note to buy ourselves presents. We were used to that. He was almost always too busy to pick things out for us and so the crisp English bills went into envelopes and were mailed from here, there, and everywhere.

As far as I can recall, Father left the "Home" shortly thereafter and returned to Rome where, on March 16, I now know that he had another attack.

They were coming so frequently and so violently that Professor Cesare Frugoni attempted to impose a strict regime, ruling out all work and every other kind of exertion. Father, the Professor told me later, was stubbornly balky when it came to taking care of himself. On the one hand he was fretting to get back to his experiments, on the other determined to fulfill his duties as president of the Italian Royal Academy and the National Council of Scientific Research. He began sneaking out of the house to hold meetings and when Frugoni realized it, he engaged a nurse to follow him, like a sleuth, in case of trouble, hypodermic needle at the ready. She continued to trail him even after he was on the mend and was officially permitted to walk from home to his Royal Academy office in the Farnesina Palace. Also, in one way or another, Father continued his experiments.

I have been able to reconstruct the nature of these from Luigi Solari's second book on Marconi and from talks with Umberto Marconi—no relation of ours, whom everyone, to avoid confusion, called Mr. di Marco. In January, 1925, Father ordered a small transmitter with a 50-centimeter wave band and a receiver made to his specifications by the Marconi Works in Genoa. On April 15 he and Solari went to Torre Chiaruccia, in the country between Civitavecchia and Rome where the Italian Navy had a small experimental wireless station. This station they loaned to the National Council of Scientific Research and Father used it for his tests.

After checking his instruments, Father directed his chauffeur to cruise slowly up and down the road for about a mile in either direction. Solari and Marconi alternated at the transmitter and receiver, carefully keeping the projector focused on the moving car. Every time the beam of the microwaves hit the car they were reflected back with a hissing sound, discernible over the receiver, as they had been at the Vatican. Here was the principle of radar, which would serve the sea-going community so effectively and the airborne as well.

The experiments were repeated in many forms and places. General Cigerza, when I met him in Washington, where he served as air attaché to the Italian Embassy, told me how, as a young pilot, he flew for hours over Tivoli and Frascati while Father beamed his microwaves from the ground at the plane. To the layman this kind of activity, especially since Italy was already embarked on her empire-building war in Ethiopia, had the sinister sound of black magic. Countrymen whispered that a flock of sheep had been killed by "death rays" and even more sophisticated people said darkly that cars on the road to Ostia had been stopped by a mysterious, invisible ray that made it impossible for them to go on. So persistent were these rumors and so seriously were they taken in some quarters that after World War II an Italian newspaper published an ugly article that Father had committed suicide after an interview with the Pope in which he confessed his guilt, taking his life because he did not want the world to know what evil things he had been up to.

Contributing to the uneasiness over Father's work was the fact that, as it was wartime, the Italian government enforced comparative secrecy about scientific progress. Mussolini, understandably, kept in close touch and came in person to witness one of the experiments and the Marconi Company in London was given routine reports. Only the press and the public were not fully informed. As it happened, during World War II the investigations which Father had begun were brought to fruition, in the form of radar, in England by English scientists.

At this juncture, with his health mortally undermined, Father had to undertake a diplomatic mission. Frugoni was beside himself and did everything in his power to prevent the trip but Father was obdurate where public service was concerned. On the strength of the Ethiopian campaign, the world's good will toward his country had sagged. It was to bolster good will as best he might that Father sailed in October for Brazil, where there are large Italian communities in Rio de Janeiro and São Paulo. After a month in that country he went to England, where he had an audience with King Edward, a friend since the old days. In Paris Marconi con-

ferred with Laval. It was small wonder that this demanding trip induced a severe heart attack.

Mr. di Marco recounted to me what happened on December 16, 1935. "On the journey between Paris and the Italian frontier," he said, "your father had very little sleep. Yet he turned up for breakfast, very pale but meticulously dressed, calm and kind as usual.

"There was a journalist on the Paris-Rome express who was determined not to pass up such a fine chance for an interview and made me promise to ask Mr. Marconi for it. When I broached the subject I remember the resigned mood in which he responded and I was surprised when he said he would talk to so-and-so.

"After he finished breakfast he talked to the newspaperman and retired to his compartment not to emerge again until lunchtime. At the table in the dining car he sat opposite his wife. I was some distance away, in the nonsmoking section of the car and lunch was being served when the waiter came to me and said 'His Excellency' was not well.

"When I rushed to the Marconis' table I found your father sitting up looking quite normal except that his eyes were closed and his head was lolling slightly to one side. Marchesa Marconi was coming around the end of the table to him. For a moment I believed that he had fainted as a result of his sleepless night and I was trying to feel his pulse when a gentleman who had been sitting at the next table got up, saying that he was Dr. Pace of Genoa, and offered his assistance.

"The three of us carried your father's unconscious form to his berth, striving as best we could to soften the jerks of the speeding train. As soon as we got back to the compartment, Marchesa Marconi unlocked a bag in which she always carried heart stimulants for her husband. Suddenly your father opened his eyes, looked at us all and said, 'What is the matter?'

"He was persuaded by his wife not to get up and Dr. Pace gave him an injection. For the rest of the journey he kept to his berth. Dr. Pace, whose destination had been Genoa, decided to proceed with us to Rome.

"On arrival Mr. Marconi showed no signs that anything untoward had happened. He walked quite steadily from the train to the exit gate, greeted several people who had come to meet him and nothing more was said or heard about the incident. The doctor, however, ordered him to stay in bed for several weeks."

Ironically, the day after the return to Rome the newspapers published the news that he was present at a meeting of the Fascist Grand Council. In fact he was safely in bed.

CHAPTER SIXTEEN

That disastrous trip put an end to traveling beyond Italian waters for Father. All the rest of 1936 he spent close to Rome, restless as a caged animal.

It was a sad time for me as well. I was living in London not because England was home to me, any more than it was to Father, but because I had in truth no home at all. In my stepfather's house I was a stranger. In my father's I was unwanted by my stepmother. With deep pain I was forced to accept Father's acquiescence in my banishment.

Marriage, my mother had raised me to believe, was the one thing a girl could look and hope for, a point of view carried over from her own youth, which I was too uncertain of myself to question. As a Protestant my chances of finding a "suitable" husband were distinctly better in England than in Italy. In London, too, an unmarried woman could live alone and no one would lift an eyebrow.

So in London I lived, my many relations and friends seeing to it that I went out into society and had what was universally regarded as "a good time." When the season was over I made the rounds from country house to country house, many of them places my parents had known. "Please remember me affectionately,"

Father wrote at one time, "to Margot Howard de Walden and Lord H. de W. and tell them how glad I am they were able to have you at Chirk, of which I have always had such nice memories."

Inevitably I acquired beaux. Perhaps my search was too patently mechanical, certainly my heart was not in it. In any case my friendships with the young Englishmen who were my partners at balls and tennis matches never developed beyond friendships. For me these years were wasted and unprofitable. Homesick as a child at boarding school, I returned to Rome whenever I could.

There I saw Father frequently and, shyly, we two grew close again. His gentleness toward me was the more remarkable since he was, in general, fretful at the ill health that confined him and restricted his activities in the winter of 1936. I began to realize that he had a sense of guilt at my having become an outcast and was trying to ameliorate the unhappiness he had allowed to come into my life.

On the larger scene he was dismayed at the political situation: his bright dreams of an Italy reborn in prestige and culture were undone by the course of a war increasingly condemned by the world. To make matters worse, the work to which he could ordinarily retreat was stalemated. His vexations accumulated and often I saw him lose his temper and express irritation and impatience.

Living with his in-laws, the Bezzi-Scalis, was galling to Marconi's independence. This state of affairs he partially remedied by making the *Elettra* his real home and spending at least six months a year aboard her. But in winter the sea was gloomy and when he came ashore and was unmistakably wretched I asked him why he did not take an apartment or rent a house of his own in Rome. He could not, Father told me, because he was trying to rebuild his patrimony, sorely depleted by the settlement he had made on Mother at the time of their divorce. Though the basic maintenance of the yacht as a laboratory was paid by the Marconi Company, the entertaining which gave him relaxation came out of his own pocket.

This was all true but Father's reminders that he was not rich and we must therefore be extremely careful not to incur extra

expenses troubled me for being dependent on him. After a slight operation I had had he paid my doctors' bills and added, "The other smaller ones you can pay out of your allowance, which is now not inconsiderable." By the time I left for London that spring we were both dejected.

An unexpected blow fell on us all on April 25, Father's sixty-second birthday. Late that night the manager of the Splendide Hotel in London called Giulio and me to say that our Uncle Alfonso was ill. We hurried into our clothes and rushed to the hotel to find he was already dead.

Feeling alien and frightened, we sent for Uncle Alfonso's friend, Dr. Corbett, who, by some alchemy I could not at the time understand, arrived with our English cousin, Henry Jameson-Davis. With the same great kindness which he had extended when Father and Grandmother first arrived in England, he took charge of all the grim but inescapable details which had to be seen to.

Father was not well enough to come to the funeral, which we arranged to hold at Highgate Cemetery—where Uncle Alfonso is buried beside our grandmother—but he was shaken by this loss and by the realization that both his mother and his brother had died of that heart disease from which he himself suffered.

I went back to Rome in the winter of 1937. It was troubling to see how much Father had aged, though I still had no definite idea of how ill he was. He never talked about it and Cristina confided nothing to us. By now the old affection had returned to replace our bruised relationship and the kindness I had so desperately missed was mine again. Misunderstandings vanished and by mutual consent we forgot them.

We were even gay. Father, in a mellow mood, took to greeting me as I came into his sitting room with "Hallo, Pretty!" and teasingly asked me when I was going to get married. I spoke of an Italian who had been paying me some attention and he made a face—he didn't think much of him. I am sorry that he never met the man I married a year after his death. I am certain he would have approved.

Then the talk would turn to Mother. Father inquired with lively and unaffected interest how she was and what she was up

to. He didn't tire of hearing even the most trivial details of our lives. Cautions about money quite forgotten, he thought it a huge joke that I had taken a job in a hat shop in Berkeley Square for a time and sympathized when I explained that it got to be a stiff bore by the second week and I quit. He knew as well as I that the money he gave me was adequate if not grand for a girl on her own.

Like all people who have been separated for a long time, Father and I reminisced. There was a great crisis when Giulio and I were still youngsters, over our going for a cruise on the *Elettra*. We wanted to go and we didn't—our hearts were undividedly given to two rather scrawny kittens. Very reluctantly, when he was unable to persuade us to part with them even for a few weeks, Father consented to adding them to the passenger list and we were in heaven. The kittens were not. The first bit of rolling and pitching turned them into terrified wild animals, digging their sharp little claws into whoever was nearest. In the best of weather they were alien to the sea, meowing and scrambling perilously up the masts from which, with the help of the crew, we had to rescue them. By the end of the trip we never wanted to see a cat again as long as we lived. Our parents thought this immensely funny and Father would write me how he "longed to have you with me *even if it had to be with cats!*"

We talked the afternoons away with complete freedom and candor since Cristina no longer intruded on us. For years she had haunted our meetings in London, Rome or wherever we were and succeeded in creating an aura of defending Father against possible depredations that left us tongue-tied and limited to superficial, stilted phrases. Now Father always received me alone. In all my visits to him I never laid eyes on Cristina nor heard the voice of my half sister, Elettra.

One change in Father raised my spirits and gave me hope for the future. His mind turned again and again to London and, incredulous though I was at first, I began to be sure that he intended to leave Rome and move there, so that he could once more enjoy the old independence to work. His plans, as he unfolded them, were clear and concise and centered on taking a house where Giulio and I were to live with him. To my joy, he wanted us once

more, not fleetingly, but entirely, regretting much that had occurred and determined to wipe out all memories of past divisions between us. Only one thing he did not specify—where Cristina and Elettra fitted into this pattern. He left me to draw my own conclusions.

I returned to London content that Father would soon be there and that we should be together again. He had recovered sufficiently to be working on the experiments he had started at Torre Chiaruccia. I could see no reason to believe that he did not have many years before him. His interest in science was undimmed and Solari reported that Father was delighted when he learned that messages were received clearly on a 55-centimeter wave length from Daventry, a little town northwest of London where BBC had established two high-power wireless stations. At the news something of his old verve reasserted itself and he told Solari there was much to be learned and he was preparing to learn it.

Alas for Father's plans! Three minor heart attacks that spring frustrated them. In May they were followed by one so severe that Mr. di Marco told me in some detail about it. "I went to his house in the morning and found him lying in bed, though quite cheerful and ready to go through the usual work of sorting correspondence and instructing me how to reply. Suddenly he showed me some bloodstains on his pajama sleeve and said with a smile: 'See what this bloodthirsty doctor of mine has done to me. If things go on like this, I shall really give up the ghost soon.' "

It was, however, impossible for any doctor to make an invalid out of Father. In June, walking slowly, his face ashen, he went with Solari at his side to inspect the new wireless station at Santa Palomba near Rome. Surrounding them were technicians and engineers, filled with pride at being allowed to show Marconi this station, the fruit of their labors and their devotion.

With the weather fair, Father longed to be back on the yacht and to set sail for London. An unfortunate dispute had arisen between him and the Marconi Company managing director, H. A. White, over a matter so trifling that I am even today stung at its having upset Father when he was critically ill. At issue was whether the company or Marconi should pay di Marco's salary

and traveling expenses! The company had not escaped the effects of the depression that made for hard times in the thirties and White was presumably troubled by a great deal more than di Marco's modest stipend. Gaston Mathieu had already been clipped from the payroll without Father's being notified, a high-handed procedure that threatened worse to come. Since the formation of the company, it had always borne the costs of Father's private secretary. Now, it seemed, it was no longer prepared to do so. What, then, would the next move be? A cut in Marconi's salary, the disposition of the yacht (for which he was allowed a minimum of 5,000 a year)? When word got around that she might have to be sold and that a shipowner in Genoa was considering buying her for 600,000 lire, the Italian government proposed taking her over so that Marconi's work might continue.

All of this was frustrating and humiliating, a poor reward for the long years of unstinting service, the personal sacrifices and the basic contributions Father made to the company which was his creation and which bore his name.

Father felt, however, that the disagreement could be settled sensibly if he himself went to London and thrashed it out. Its resolution might, he well understood, affect his entire position with the company. At the same time he could make arrangements for returning to London to settle there permanently at the end of the summer.

The doctors in Rome vetoed the journey, to my lasting sorrow. They wanted him to remain in Rome, or within easy reach of Rome. With this restriction imposed on him, Father visited several places in the Alban Hills nearby but none of them suited his purposes which were, as always, to make experiments. A compromise was finally effected. Father would go to Viareggio where he could stop at the comfortable Hotel Astor, with the *Elettra* moored in full view of the front windows. Game to the last, he firmly informed his doctors that this would only be a postponement. He intended to go on to London as soon as his stay at the seashore was finished.

It was tropically hot in Rome that July and Elettra had already left and was with her grandmother, Countess Bezzi-Scali, at

Viareggio. Her seventh birthday fell on Tuesday, July 20, and her parents planned to be with her to celebrate it. In the meantime, Marconi was deep in unfinished business for the Royal Academy. Another thing that kept him from leaving was that he had applied for an audience with the Pope at Castle Gandolfo. It was granted and took place on July 17. What they talked about no one will ever know. It was said that Father wanted to give the Pontiff news of recent developments in wireless. That could have waited. I am convinced that Father was impelled by more personal and pressing motives. He was on the threshold of a new life. As he had made clear to me, he had decided to live alone and to transfer himself and his work to England, despite his abiding love of his own country. At such a juncture he would have turned to a man of elevated spiritual insight who had repeatedly shown him understanding and friendship.

Another meeting, of a far different sort, was scheduled for Monday, July 19. As president of the Royal Academy and of the Council of Scientific Research, he was to see the head of the government, Mussolini. This was routine business for they met frequently, though at indefinite intervals. The meeting did not take place.

Around noon Father went to the railroad station to see Cristina off, laden with presents for their beloved youngster. Father would follow, he hoped, on Wednesday, July 21.

From the station he went to his office in the Farnesina Palace, wrote some letters, di Marco recalls, and conferred with Carlo Formichi, his senior vice-president who would deputize for him while he was away. Di Marco rode in the car with him when he left after one o'clock. He was silent throughout the drive except for telling his chauffeur to stop at the Marconi office, where di Marco left him. There he climbed the stairs and had a short talk with Solari. In his book Solari says Father went directly to a sofa opposite his desk and sank down on it heavily before greeting him or clasping his hand.

The subject they talked of was the one uppermost in both their minds, the experiments on microwaves Father planned to work out aboard the yacht. "There is a great deal yet to do in this

field," he concluded with a sigh. "I wish I had the energy I used to have... the energy I no longer have." Then he got up and Solari walked with him onto the landing and watched him go slowly down the stairs. At the bottom Father turned and waved good-by affectionately to his old friend.

At four o'clock Father saw his lawyer, Carlo d'Amelio, at home and at five di Marco arrived with the letters to be signed. At six Marconi was expected to see Mussolini but when di Marco got to the house he was feeling so far from well that his father-in-law was calling the doctor. Di Marco promptly canceled the appointment with the Duce.

Dr. Arnaldo Pozzi, chief assistant to Professor Frugoni, arrived within the hour. In the meantime the nurse, who had been permanently installed in the house, did what she could to make Father comfortable. After Pozzi arrived, di Marco sat alone in the sitting room I had come to know so well and through the half-open door heard Father's voice as he talked with Pozzi, his tone calm and witty. Di Marco, lingering to hear the doctor's verdict, had lived through so many of these crises that he felt no special anxiety.

His optimism was confirmed by Pozzi, who assured him that things were nowhere near as serious as they had been when Father had his bad attack last May. Nevertheless he promised that when Frugoni, who was out of town, returned late that night, he would ask him to stop in and check. The two men left together.

Later that night Father took a sudden turn for the worse. Pozzi sent someone to the railway station to meet Professor Frugoni's train and bring him directly to the Via Condotti.

It was very warm in the room where Father lay with hardly a breath of air filtering through the open window. On the hour, the bronze notes of the bell of the old church of Trinità dei Monti hung in the air, suspended in the heat and silence.

Frugoni has written me of what he found when he arrived: "Perhaps you will remember that your father had an irregularity of the left cubital artery. By watching his pulse he could clearly see the pulsations of his artery and as he had been twice *'in limite mortis'* from occlusion of the heart, he had learned to watch his artery.

"Reclining and looking very pale he lifted his forearm and saw that the blood in the artery was not beating any more. Turning to me he said in a low voice, 'How is it, Frugoni, that my heart has stopped beating and I am still alive?' To which I replied: 'Don't ask such questions, it is only a matter of position, because your forearm is raised.'

"With a little wry smile he said: 'No my dear doctor, this would be correct for the veins but not for an artery,' showing that, to him, as a scientist, one could not tell pitiful lies which broke the laws of physics. And in fact he was perfectly right in his conclusion.

"He then frowned slightly and said, 'But I don't care' and again, while his forehead slowly relaxed, 'I don't care at all.' "

Then my father, Guglielmo Marconi, tried to turn over and draw one last breath, and failed. It was 3:45 A.M. of July 20, 1937.

EPILOGUE

The career that had started at Pontecchio was finished, and the world was prepared to assess it with honor. Yet no one could then foresee that the impulses my father had sent around the globe would, in our day, serve to reach into outer space. Because of him the orbiting satellites speak to us across the empty miles and, like mirrors, send back pictures of our own Earth. When man reaches the Moon and Mars he will be able to communicate across space—owing to the vision of a boy who sent a signal from the attic of an old house in Italy to his brother in the vineyard over the hill on an autumn day in 1894.

That morning in 1937 the news of my father's death reached me in Devonshire and Giulio heard it over the radio in America.

Although he sailed at once on the *Berengaria,* neither he nor I could get to Rome in time for the funeral at six o'clock in the afternoon of July 21. Newspapers in England told me how thousands of mourners, official and unofficial, walked behind Marconi's coffin and thousands more lined the streets where it passed in slow and solemn procession from the Farnesina Palace, across Rome, to the Church of Santa Maria degli Angeli.

My mother, drawn by love and loyalty, had gone to see him as he lay in state and wrote me on July 22:

My darling Precious Child,

The first moment of peace to write you what's happened. My thoughts have been all the time with you and poor Giulio, away at this moment and I wish you could have been here to see and feel the touching love and tributes to him—lying there at the Farnesina, looking so peaceful and serene.

The *ambiente* was simple and austerely pious, no flowers, no candles, just one continuous flow of people of all classes, all nationalities, to render their last grateful tribute.

I went alone and mingled with the crowd and it helped me and gave me a sense of peace and that all the pettinesses and misunderstandings of this material life had slipped away and that he understood so many things better now. I wished with all my heart and soul you and Giulio could have been there.

I asked to be allowed to go up close and for a moment was overwhelmed but I knelt until I could get hold of myself and then I left. Although there was a crowd all the time, a moving stream, I was unobserved and no one could have recognized me.

Those who saw the procession say they have *never* on any occasion in Rome seen anything to equal it. The dense crowds for hours and hours in the heat—the heart and soul of Rome and the whole nation seemed to go with him. It was the humble, loving thought that was so impressive.

Gioia, who was in Santa Maria degli Angeli next to Cristina, says it was awe-inspiring. She says that as each nation gave the the last salute, Japan stood for almost three minutes. . . .

In the British Isles, where I was, the air fell silent. All post office wireless stations were still for two minutes beginning at six o'clock. The operators at the General Post Office came to attention beside their transmitters and at the international wireless telephone exchange the girls who operated the empire service rose and stood with bowed heads beside their switchboards. Throughout the United Kingdom and the empire that Father had linked together, no radio messages were transmitted or received and all of BBC's wireless stations went off the air.

The great hush Marconi had lifted descended for those two minutes around the world.

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ABOUT THE AUTHOR

Degna Marconi, the first daughter of Guglielmo Marconi, was born in London, thirteen years after her father's momentous invention of wireless. *My Father, Marconi* tells of her life up to 1937. Subsequently, she married Dr. Gabriele Paresce, who from 1949 to 1960 was Press Counselor to the Italian Embassy in Washington, D.C., and who has recently been appointed Italian Ambassador to Korea. Her son, Francesco, was born in London in 1940, but chose, she says, to become "an American of Americans" while attending Landon School in Washington. Signora Paresce currently makes her home with her family in Rome.

(continued from front flap)
Despite a few doubtful critics, one triumph followed another as the inventor and his newly founded Marconi Wireless Company were toasted on both sides of the Atlantic.

In the midst of this international life, he fell deeply in love with the beautiful Beatrice O'Brien of Inchiquin, and after an arduous. courtship, convinced her to marry him. Author Degna Marconi tells in fascinating and touching terms the long history of their marriage that was to end tragically and have so astounding an aftermath. In spite of a mounting wave of family conflicts, there were rich, exhilarating moments for Marconi. Three years after he won the Nobel Prize in 1909, the H.M.S. *Titanic* sent its historic SOS, dramatizing unforgettably the full and vital significance of wireless.

Tracing the events that followed, Degna Marconi recalls not only the affection, but the moments of estrangement and final, brief reconciliation between the now aging scientist and his children. She vividly describes her now old and honored father married to a young woman only a fraction of his age, as he weathered a business scandal that nearly wrecked his company, and continued to perfect and refine his discoveries throughout his last, strangely sad, years.

Author Degna Marconi, from her position as daughter of the famous scientist, skillfully blends the excitement and glamour of Marconi's fame as an internationally renowned inventor with the passion and incredible loneliness of his personal life in this remarkable biography. Much more than an intimate study of a devoted scientist, *My Father, Marconi* is a portrait of an era and how it was affected by the monumental work of one man.

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